Areas 4 and 5 - Phase II Soil Characterization
McDonnell Douglas Realty Company
C-6 Facility
Los Angeles, California

Prepared for:

McDonnell Douglas Realty Company
4060 Lakewood Boulevard, Sixth Floor
Long Beach, CA 90808

Prepared by:

Kennedy/Jenks Consultants
Engineers & Scientists
2151 Michelson Drive, Suite 100
Irvine, CA 92612-1311

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AREAS 4 AND 5 - PHASE II SOIL CHARACTERIZATION
MCDONNELL DOUGLAS REALTY COMPANY C-6 FACILITY
LOS ANGELES, CALIFORNIA

EXECUTIVE SUMMARY

This report discusses the Phase II Soil Characterization for Areas 4 and 5 of the McDonnell Douglas Realty Company (MDRC) C-6 Facility (Facility) located in Los Angeles, California. The characterization was completed under the oversight of the Los Angeles Region of the Regional Water Quality Control Board (RWQCB) as the lead agency, with input from the Department of Toxic Substance Control (DTSC). The Areas 4 and 5 report is one of a series of reports that cover the Facility. The report sections include:

1.0 Introduction

Section 1.0 describes Areas 4 and 5 and discusses the purpose of the investigation.

2.0 Areas 4 and 5 Description

Section 2.0 provides a brief history of the Facility, with particular emphasis on Areas 4 and 5. Hydrogeologic setting is summarized, based on published reports and previous work, and geologic units identified from the Phase II Soil Characterization are described.

3.0 Program Design

Section 3.0 presents a detailed description of the soil characterization program. It discusses the historical use of each area of Areas 4 and 5 and explains the rationale used in determining the analytical program.

4.0 Soil Sampling and Analytical Methods

Section 4.0 describes the soil sampling program, including drilling, sampling and analytical methodology, chain of custody, and QA/QC program.

5.0 Investigation Results

Section 5.0 discusses the results from each area and presents findings in tables and figures. The complete laboratory reports are provided in appendices to the report.

6.0 Conclusions

Section 6.0 summarizes the conclusions resulting from the investigation.

7.0 References Cited

Section 7.0 presents a list of references cited throughout the report.

PURPOSE

The purpose of the Phase II Soil Characterization of Areas 4 & 5 was to characterize the nature of the soils and to identify areas of concern. These data will provide support to develop a risk assessment, to plan future groundwater investigations, and for future feasibility studies and possible soil remediation. The soil characterization included the physical properties of the soils, the subsurface distribution of the soil types, and the nature and extent of any chemicals of concern (COCs) within the soils.

LOCATION AND DESCRIPTION OF AREAS 4 AND 5

The Facility is located at 19503 South Normandie Avenue in Los Angeles, California (Figure 1). The Facility is bordered on the north by West 190th Street, on the east by railroad tracks and South Normandie Avenue, on the south by Montrose Chemical and residential properties, and on the west by Western Avenue, Capitol Metals, and International Light Metals (ILM).

Areas 4 and 5 occupy approximately 47 acres of the C-6 Facility. Area 4, comprising approximately 4 acres, is the driveway between Building 66 and the eastern border of the C-6 Facility. The driveway is about 1,650 feet long, trending north-south, 90 feet wide, and supports shipping and receiving operations occurring on the north side of Building 66. Area 5, occupying approximately 43 acres, encompasses the central portion of the C-6 Facility from Building 1 to the western border (Figure 2). The area includes Buildings 1, 32, 29, and 20 east of Denker Avenue, and all of the small buildings west of Denker Avenue between the northwest and southwest parking lots.

GEOLOGY AND HYDROGEOLOGY

Hydrogeologic setting of the Facility was determined mainly from reference to reports published by the U.S. Geological Survey and the California Department of Water Resources. The Facility is at about 50 feet mean sea level (MSL) elevation on the Torrance Plain, a Pleistocene-age marine surface. Near-surface sediments underlying the Facility are assigned to the Lakewood Formation and include marine and continental deposits of late Pleistocene age. Aquifers underlying the Facility include the Semiperched and Gage Aquifers within the Lakewood Formation and the Lynwood and Silverado Aquifers in the deeper San Pedro Formation. Previous groundwater investigations and monitoring at the Facility established that the uppermost groundwater is at 60 to 70 feet depth in the Semiperched Aquifer, with a hydraulic gradient to the south-southeast, measured at 3.5 feet per mile in late 1996.

Fifteen continuous core borings were drilled throughout the Facility (Figure 1A). Extensive information regarding the soils within 50 feet below the ground surface (bgs) at the Facility was developed from the drilling and geologic logging in the Phase II Soil Characterization. Four distinct subsurface units were identified (Q1 through Q4). Three of these soil units correlated over the entire Facility (Q1, Q2, and Q3), while the fourth (Q4) pinches out on the northwest and dips below the depth drilled on the east. The uppermost soils at the Facility consist predominantly of clay and silt. These fine-grained soils are present to about 22 feet bgs on the west and thicken to about 45 feet on the east. Soils below these depths are predominantly sand and silty sand to the 50-foot maximum depth drilled.

FIELD PROGRAM

A Field Sampling Plan was developed based on the findings of the Phase I environmental site assessments of the Facility. The Plan identified the individual areas of potential concern and reviewed the history of the areas. Based on these data, specific analytical testing was proposed at each location. The Plan was reviewed and approved by the RWQCB and DTSC.

Fifty soil borings were drilled and 186 soil samples were collected for analysis in the locations investigated for the Phase II Soil Characterization of Areas 4 and 5. The soil borings were drilled with either direct hydraulic-push or hollow-stem auger drilling methods. Borings to 10 feet and 25 feet bgs were drilled and sampled by direct-push methods. Borings to 50 feet bgs were drilled by hollow-stem auger.

All soil samples were analyzed for volatile organic compounds (VOCs) by EPA Methods 8260 and/or 8010/8020. Samples from all but two borings were analyzed for total recoverable petroleum hydrocarbons (TRPH) by EPA Method 418.1. Selected additional analyses were performed on an area-by-area basis and include Title 22 metals, including hexavalent chromium (EPA Methods 6010, 7196, and 7471), semivolatile organic compounds (SVOCs) (EPA Method 8270), polychlorinated biphenyls (PCB) (EPA Method 8080), pH (EPA Method 9045), and cyanide (EPA Method 9010). Most of the samples were first analyzed on site for VOCs and TRPH by

state-certified mobile laboratories. If these initial analyses indicated total VOC concentrations exceeding 200 micrograms/kilogram (μg/kg), the samples were also analyzed in a state-certified stationary laboratory for confirmation. As an additional quality assurance (QA) check, the offsite stationary laboratory also analyzed 10 percent of the samples for which the mobile laboratory reported VOCs and TRPH as not detected.

SUMMARY OF FINDINGS

Area 4, the driveway east of Building 66, was not divided into areas for separate investigation. Area 5 was divided into the following nine areas of potential concern which were investigated individually:

- Building 15, Photo Lab
- Border with International Light Metals
- Open Space west of Denker Avenue
- Building 20, Auto Repair Shop
- Salvage Area Behind Building 32
- Building 1, Paint Booth
- Building 1, Dip Tank Area
- Building 1, Basement
- Area Between Buildings 1 and 2

Of these areas of potential concern investigated in Areas 4 and 5, only Building 20 was found to contain COCs at levels such that they were designated areas of concern. The results of the study at Building 20 and other notable findings are summarized below.

Building 20

Several soil samples collected from the Building 20 borings were impacted with petroleum hydrocarbons. Gasoline was detected in three samples with the concentrations ranging from 300,000 μg/kg to 5,100,000 μg/kg. The gasoline impact

detected in the 1-foot bgs sample from boring 2BB-5-13 appears to be limited in extent because it was not detected in the samples from the nearby borings 2BB-5-14 and 2BB-5-12, nor was it detected in deeper samples from boring 2BB-5-13. The gasoline detected in the 7-foot and 10-foot bgs samples from boring 2BB-5-16 appears to be limited in vertical extent because the 15-foot sample did not contain detectable concentrations of gasoline. The lateral extent of the gasoline impact, however, is not well constrained around boring 2BB-5-16. TRPH was also detected in shallow samples from borings 2BB-5-12, 13, 14, 16, 17, and 19 in concentrations ranging from 14 mg/kg to 23,000 mg/kg. TPH motor oil was detected in shallow samples from borings 2BB-5-16, 17, and 19 in concentrations no greater than 1,200 mg/kg. TPH diesel was detected in the 7-foot and 10-foot samples from boring 2BB-5-16 at 18,000 and 15,000 mg/kg, respectively.

Area 4

Analysis of the results of the Phase II Soil Characterization indicated Area 4, the driveway between Building 66 and the eastern border of the C-6 Facility, is not an area of concern. While petroleum hydrocarbons were found in many of the samples collected from this area, the detections occurred in shallow samples, and the concentrations were no greater than 430 mg/kg. This area did not contain petroleum hydrocarbons in concentrations, distribution, or frequency of occurrence to be designated as an area of concern.

Border with International Light Metals

Low concentrations of trichloroethene (TCE) were detected in the 40-foot sample and the 50-foot sample from borings 2BB-5-3 and 2BB-5-4, respectively. The presence of TCE in these samples is consistent with the findings of other soil borings along the border which are described in the Parcel A Phase II Soil Characterization report (Kennedy/Jenks, 1997). The TCE may have migrated from documented sources of TCE impact on the adjacent ILM property.

Building 1, Basement and Paint Booth

The soil beneath the basement of Building 1, particularly the eastern and northeastern parts, has been impacted with VOCs including TCE, 1,1-dichloroethene (1,1-DCE), and tetrachloroethene (PCE). The impacts observed in the basement and paint booth borings appear to be the result of releases centered around Building 36 to the north. The results of investigation in the area of Building 36 are described in the Phase II Soil Characterization Report for Parcel A (Kennedy/Jenks, 1997c).

Salvage Area Behind Building 32

Samples collected from boring 2BB-5-20, located in the salvage area north of Building 32, contained petroleum hydrocarbons. While the 1-foot sample contained TRPH at 9,100 mg/kg, the 4, 10, and 30-foot samples contained TRPH no greater than 15 mg/kg. In addition, the 1-foot sample contained arsenic at a concentration of 170 mg/kg as well as low concentrations of cadmium and lead. This area did not contain petroleum hydrocarbons or metals in concentrations, distribution, or frequency of occurrence to be designated as an area of concern.

None of the other areas of potential concern investigated in Area 5 were found to contain COCs at concentrations, frequency, or distribution such that they were designated areas of concern.

1.0 INTRODUCTION

Kennedy/Jenks Consultants performed a Phase II Soil Characterization of the McDonnell Douglas Realty Company (MDRC) C-6 Facility (Facility) under Contract No. 97-007TO, dated 21 February 1997. A Field Sampling Plan (FSP) was prepared for the soil characterization and reviewed and approved by the Regional Water Quality Control Board, Los Angeles Region (RWQCB), the lead agency; the Department of Toxic Substance Control (DTSC); and the Office of Scientific Affairs (OSA).

This section provides a description of the general location of the Facility and Areas 4 and 5 of the Facility. The Section also presents the purpose of the Phase II Soil Characterization program.

1.1 C-6 Facility Location

The Facility is approximately 170 acres, located at 19503 South Normandie Avenue in Los Angeles, California (Figure 1). The Facility is bordered on the north by West 190th Street, on the east by railroad tracks and South Normandie Avenue, on the south by Montrose Chemical and residential properties, and on the west by Western Avenue, Capitol Metals, and International Light Metals (ILM).

Areas 4 and 5 occupy approximately 47 acres of the C-6 Facility. Area 4, comprising approximately 4 acres, is the driveway between Building 66 and the eastern border of the C-6 Facility. The driveway is about 1,650 feet long, trending north-south, 90 feet wide, and supports shipping and receiving operations occurring on the north side of Building 66. Area 5, occupying approximately 43 acres, encompasses the central portion of the C-6 Facility from Building 1 to the western border (Figure 2). The area includes Buildings 1, 32, 29, and 20 east of Denker Avenue, and all of the small buildings west of Denker Avenue between the northwest and southwest parking lots.

1.2 Purpose

The purpose of the Phase II Soil Characterization was to identify and characterize the nature of the soils above groundwater, potential areas of concern throughout the Facility, including Areas 4 and 5, and to support the ongoing risk assessment. The soil

characterization included the physical properties of the soils, the subsurface distribution of the soil types, and the nature and extent of Chemicals of Concern (COCs) within the soils.

2.0 AREAS 4 AND 5 DESCRIPTION

This section provides a history of the Facility and a description Areas 4 and 5. This section also presents a discussion of the regional and local geology and hydrogeology.

2.1 Description and History of Areas of Investigation

A review of aerial photographs indicated that the Facility was farmland prior to the 1940s (Kennedy/Jenks Consultants, March 1996). The Facility was first developed by the Defense Plant Corporation in 1941, as part of an aluminum reduction plant. The plant was operated by the Aluminum Company of America until late 1944 (Camp, Dresser & McKee, 1991). In 1948, the property was acquired by the Columbia Steel Company. In March 1952, the U.S. Navy purchased the property from the Columbia Steel Company and established Douglas Aircraft Company (DAC) as the contractor and operator of the Facility for the manufacturing of aircraft and aircraft parts. DAC purchased the Facility from the Navy in 1970 (Camp, Dresser & McKee, 1991). The Facility was transferred to MDRC in 1996.

Areas 4 and 5 were investigated based on potential areas of concern and to support the ongoing risk assessment. The discussions that follow focus on the general uses of each area. Section 3.0 discusses the historical use of each building and potential area of concern within Areas 4 and 5 based on Phase 1 environmental site assessments conducted by Kennedy/Jenks Consultants in March 1996 and May 1997.

2.2 Regional Geology And Hydrogeology

The geology and hydrogeology of the region surrounding the Facility were determined mainly from reference to reports published by the U.S. Geological Survey (USGS) (Poland and others, 1959) and the California Department of Water Resources (DWR, 1961). Reference also was made to previous reports prepared by Kennedy/Jenks Consultants for the Facility.

The Facility is located on a broad plain at an elevation of about 50 feet MSL. The DWR and USGS define this area as the Torrance Plain, a Pleistocene-age marine surface and a subdivision of the Coastal Plain of Los Angeles and Orange Counties. The ground

surface in this area is generally flat with an eastward gradient of about 20 feet per mile (less than one-half percent). Surface drainage is generally toward the Dominguez Channel, about a mile to the east. The Dominguez Channel, in turn, flows southeastward toward the Los Angeles and Long Beach Harbors in San Pedro Bay.

The surface sediments in this area are assigned to the Lakewood Formation (DWR, 1961), a unit defined to include essentially all of the upper Pleistocene sediments in the Los Angeles Coastal Plain area. The Lakewood Formation includes deposits of both marine and continental origin, representing stream transport and sedimentation along the Pleistocene marine plain. In the Facility area, the Lakewood Formation may include the Semiperched Aquifer, the Bellflower Aquiclude, and the Gage Aquifer. The Semiperched Aquifer includes deposits described as Terrace Cover (Poland and others, 1959). Extent and thickness of this unit is not rigorously defined, but appears to include the near-surface water-bearing units in the area of the Facility. The Bellflower Aquiclude is described as a heterogeneous mixture of continental, marine, and wind-blown sediments, mainly consisting of clays with sandy and gravely lenses (DWR, 1961). The base of the Bellflower Aquiclude is about 100 feet below sea level (about 150 feet bgs) in the Facility area. The Gage Aquifer is a water-bearing zone of fine to medium sand and gravel confined by the Bellflower Aquiclude. It is reported to be about 40 feet thick in the Facility area and is described as being of secondary importance as a water source (DWR, 1961).

The Lakewood Formation is underlain by the Lower Pleistocene San Pedro Formation, which continues to about 1,000 feet in depth in the Facility area. Major water-bearing zones within the San Pedro Formation are the Lynwood Aquifer and the Silverado Aquifer. These are reported to be at depths of about 300 and 500 feet, respectively, in the Facility area (DWR, 1961). The Silverado is an important groundwater source in the Coastal Plain and is considered a source of drinking water (DWR, 1961).

2.3 Local Geology And Hydrogeology

2.3.1 Local Geology

The drilling program conducted during the Phase II Soil Characterization provided extensive information with regard to the sediments within the upper 50 feet at the Facility. The drilling program included 36 hollow-stem auger borings and 174 direct-push probes, totaling approximately 4,700 linear feet. The drilling program for Areas 4 and 5 included 4 hollow-stem auger borings and 46 direct-push borings totaling about 826 linear feet. Boring locations are shown on Figure 2 and boring logs are in Appendix A.

To allow detailed examination of the subsurface soils, 15 borings at various locations within the Facility were continuously sampled from the surface to 50 feet bgs (Figure 1A). The detailed logs from some of these borings were used to construct the generalized cross-sections that are presented in Figures 3 through 5. Logs from the other, shallower borings are consistent with the soil units shown on the generalized cross-sections.

Several distinctive soil units were recognized in the subsurface and can be correlated between borings, as shown on Figures 3 through 5. For convenience in this text, the subsurface soil units are informally designated Units Q1 through Q4.

Unit Q1: Unit Q1 is a layer of silty clay and sandy clay encountered at the surface or just below the pavement or engineered fill soils over the entire Facility. This clay is typically dark brown to dark reddish brown in color and medium stiff to hard. It has moderate to high plasticity and is classified as CL or CH under the Unified Soil Classification System (USCS). Unit Q1 has a uniform thickness of about 5 feet along the west side of the Facility. It thickens to about 22 feet on the northeast corner of the Facility.

Unit Q2: Unit Q2 comprises a sequence of interbedded clayey silt, fine sandy silt, and fine silty sand with minor lenses of silty clay. The predominant USCS classifications are ML and SM. The Unit Q2 soils are brown, olive brown, and reddish brown in color and are generally medium dense. Unit Q2 is about 17 to 20 feet thick and the base is about

22 to 25 feet bgs along the west side of the Facility. The unit thickens to about 30 feet at the east side of the Facility. The base of Unit Q2 also slopes eastward, and occurs at depths of 45 to 50 feet along the east side of the Facility.

Unit Q3: Unit Q3 is an interval of fine and very fine sand with only minor silt. Soils in this interval generally are classified as SP and SP-SM under the USCS. This soil unit includes distinctive beds containing abundant shell fragments. The sand is mainly light yellowish brown to light yellowish gray in color. It has generally massive structure, and commonly is described as being similar to beach sand. The sand is generally dense, but has essentially no cohesion.

Unit Q3 is more than 28 feet thick on the west side of the Facility, extending from about 22 feet bgs to below the 50-foot depth drilled at the northwest corner of the Facility. However, in the southern part of the Facility, Unit Q3 is interlayered with Unit Q4, a wedge of fine silty sand and fine sandy silt.

Unit Q4: Unit Q4 was observed in borings in the southwestern and central part of the Facility. It pinches out in the northwestern part of the area and is likely below the depth drilled on the east. Maximum thickness of this soil unit is about 17 feet, on the southwest. Unit Q4 mainly contains fine silty sand (SM) and clayey silt (ML) with thin interbeds of silty clay and fine sand. These soils are generally yellowish brown in color and are medium dense to dense.

2.3.2 Local Hydrogeology

Groundwater conditions at the Facility are known from previous investigations and from the quarterly groundwater monitoring program (Kennedy/Jenks Consultants, 1997a). Groundwater samples from 15 observation wells at the Facility have been sampled and analyzed on a quarterly basis since 1992. The drilling for the Phase II Soil Characterization was entirely in the unsaturated zone and did not provide additional information on groundwater.

The uppermost groundwater at the Facility appears to be under water-table conditions at depths of 60 to 70 feet. Regionally, this uppermost groundwater is probably considered

part of the Semiperched Aquifer discussed previously and is separated from the deeper zones by the Bellflower Aquiclude.

Monitoring wells at the Facility are completed in two zones. Most of the wells are completed at or near the water table, at depths of about 55 to 90 feet. Two deeper wells, WCC-1D and WCC-3D, are completed in a deeper zone at about 115 to 140 feet.

Complete records of water-level measurements are included in the quarterly Groundwater Monitoring Summary Reports (Kennedy/Jenks Consultants, 1997a). The hydraulic gradient in the uppermost groundwater is generally toward the south-southeast, toward a local low in the area of wells WCC-7S and WCC-12S. The December 1996 groundwater gradient was 6.6×10^{-6} ft/ft (3.5 ft/mile).

3.0 PROGRAM DESIGN

This section provides the details of the Phase II Soil Characterization program design, the rationale for soil boring placement, and analytical testing on an area-by-area and building-by-building basis.

3.1 Program Design

The soil sampling program was designed to detect COCs throughout the Facility and, as such, is conservative throughout. Additional samples and/or analyses were added to the program, where appropriate, to provide high confidence that COCs would be adequately characterized. Soil sampling locations were placed in known storage or chemical process areas and in previously identified potential areas of concern. Additional soil borings were placed at various spacings to cover open areas and border areas of particular interest.

To best describe the subsurface soils, soil borings were completed to three different nominal depths: 10 feet, 25 feet, and 50 feet bgs. The 10-foot and 25-foot soil borings were completed by direct-push technology and the 50-foot soil borings were completed by hollow-stem auger. Further detail of the drilling methodologies is presented in Section 4.1. Detailed geologic boring logs were made of each soil boring and are presented in Appendix A. All Push borings were continuously cored in their upper 10 feet. A total of fifteen 50-foot soil borings were continuously cored to total depth to provide detailed soils data across the Facility, in addition to the analytical testing.

Field activities were initiated with selection of sampling locations, geophysical screening for underground obstructions, and coring of concrete paving to access subsurface soils. Additional geophysical screening and concrete coring were conducted during the drilling program when new borehole locations were added to the investigation.

Soil samples were collected from 1 foot, 4 feet, and 10 feet bgs in all borings. Where possible, the uppermost soil sample was collected from 6 inches bgs; however, in many instances a 6-inch sample was impractical due to either the deteriorated asphalt at the surface, fill, base materials for concrete, railroad ballast, or because the surface had

been disturbed by building demolition. Soil samples were collected at 5-foot intervals below 10 feet depth in borings drilled to 25 feet bgs and on 10-foot intervals below 10 feet depth in 50 foot boreholes.

The program had one to three drilling rigs collecting soil samples each day and was designed to process approximately 50 to 60 soil samples per day.

Blank samples and confirmation analyses were used for QA in the field program. Daily rinsate blanks were used to check decontamination of sampling equipment. Daily travel blanks accompanied all samples shipped to the stationary laboratory. Ten percent of the samples showing non-detect results for EPA Methods 8260 and 418.1 from the onsite mobile laboratories were sent to the stationary laboratory for confirmatory analysis. In addition, EPA Method 8260 mobile onsite laboratory results exceeding 200 micrograms per kilogram (µg/kg) total VOCs were also sent to the stationary laboratory for confirmation analysis. Split soil samples were also collected by the RWQCB at selected sampling locations. Original laboratory reports are presented in Appendix B.

3.1.1 Sample Identification

Soil samples were identified with a unique boring number and depth using a predetermined nomenclature. For the Area 4 and 5 Soil Characterization, an example identification code is:

2BB-4-5-10

Where

2BB-	study designation
4-	area designation
5-	boring number in that area
10	nominal sample depth.

3.2 Rationale for Sampling Locations and Analytical Testing

The rationale for the sampling locations and analytical testing that follows is based on any of the following factors:

- The locations of known past processes that used specific chemicals.

- The location of specific equipment of concern, such as electrical transformers, clarifiers, ASTs, USTs, and others.

- Locations that border areas of known or suspected contamination.

- Soil samples were also collected and analyzed from areas having no prior history of concern to provide a comprehensive data base on Facility soil conditions for use in the risk assessment.

Sampling locations are shown on Figure 2. The following discussion presents a summary of sampling locations and analytical testing for Areas 4 and 5. Table 1 presents the overall soil sampling analytical program for Areas 4 and 5.

3.2.1 Area 4

Area 4, comprising approximately 4 acres, is the driveway between Building 66 and the eastern border of the C-6 Facility (Figure 2). Topography in Area 4 is essentially flat with an elevation of approximately 50 feet above mean sea level (MSL).

Seven soil borings were drilled in Area 4. Six borings were pushed to a depth of 10 feet bgs, and one (2BB-4-3A) was drilled to a depth of 50 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and sampled for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), Title 22 metals (6010, 7196, and 7471) and semivolatile organic compounds (SVOCs) (8270).

3.2.2 Area 5

Area 5, occupies approximately 43 acres comprising the central portion of the C-6 Facility from Building 1 to the western border (Figure 2). The area includes Buildings 1, 32, 29, and 20 east of Denker Avenue, and all of the small buildings west of Denker Avenue between the northwest and southwest parking lots.

3.2.2.1 Building 15, Photo Lab

Building 15 is located in the southwest corner of Area 5, west of Denker Avenue. Historical records show that the building has housed a payroll department, shipping office, and photo laboratory.

One soil boring, 2BB-5-2, was drilled outside the north wall of Building 15 adjacent to where the photo laboratory was located. The boring was pushed to 10 feet. Soil samples were collected according to the depth sheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), Title 22 metals (6010, 7196, and 7471), and cyanide (9010).

3.2.2.2 Border with International Light Metals

Area 5 borders ILM to the west, an area of known soil and groundwater contamination. Railroad tracks are located along the border to the west.

Two borings, 2BB-5-3 and 2BB-5-4, were drilled along the border with the ILM. The borings were drilled to 50 feet bgs using hollow stem auger. Soil samples were collected according to the depth scheme presented in Table 1 and sampled for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), Title 22 metals (6010, 7196, and 7471), and PCBs (8080).

3.2.2.3 Western Open Space

This area comprises numerous small buildings located west of Denker Avenue, including Buildings 4, 11, 13, 14, 15, 18, 60, 60A, and 60B. The area was investigated to support the Risk Assessment.

Four borings (2BB-5-6 through 2BB-5-9) were drilled at various locations between the buildings. Each boring was pushed to 10 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471).

3.2.2.4 Building 20

Building 20 is the active vehicle maintenance area of the facility and contains the following: battery recharging area in the north end of the building, a 3-stage clarifier draining a steam cleaning boot, an above ground motor oil tank, hydraulic lifts, and a condensation pit in the southwest corner. Outside the building is an active pump island that dispenses unleaded and regular gas from underground tanks.

All of the borings in the Building 20 area were drilled using direct push. The soil samples were collected according to the depth scheme presented in Table 1. Boring 2BB-5-10 was drilled to 10 feet bgs in the battery recharging area. Soil samples were analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), Title 22 metals (6010, 7196, and 7471), and pH (9045). Boring 2BB-5-11 was drilled to 26 feet bgs near the 3-stage clarifier. Soil samples were analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471). Boring 2BB-5-12 was drilled to 25 feet bgs near the above ground motor oil tank. Soil samples were analyzed for VOCs (8260 or 8010/8020) and petroleum hydrocarbons (418.1 and 8015M). Borings 2BB-5-13 and 2BB-5-14 were drilled to 25 feet bgs. Soil samples were analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), SVOCs (8270), and PCBs (8080). Boring 2BB-5-16 was drilled to 25 feet bgs near the condensation pit. Boring 2BB-5-15 was cancelled because the proposed boring location was inaccessible to the drilling rig. Soil samples from 2BB-5-16 were analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471). Borings 2BB-5-17 through 2BB-5-19 were drilled near the pump island and underground fuel tanks. Borings 2BB-5-18 and 2BB-5-19 were drilled to 25 feet bgs, but 2BB-5-17 was was terminated at 5 feet bgs due to refusal. Soil samples were analyzed for VOCs (8260 or 8010/8020) and petroleum hydrocarbons (418.1 and 8015M).

3.2.2.5 Salvage Area Behind Building 32

Building 32 was built in the 1980s and has been used as a cafeteria and meeting hall. A small salvage yard was maintained just outside the building to the north.

One boring (2BB-5-20) was drilled in the former salvage area behind Building 32. The boring was drilled to 50 feet bgs using a hollow stem auger. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471).

3.2.2.6 Building 1, Paint Booth

Building 1 is presently used for storage of small tools and records. Historically the building was used as a carbon baking area and for metal finishing. Most of the equipment has been removed and most of the processes took place on the first floor of the building. A painting booth was located in the northeast part of the building.

Two borings (2BB-5-21 and 2BB-5-22) were drilled in the paint booth area. Both borings were pushed to 25 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), Title 22 metals (6010, 7196, and 7471), SVOCs (8270), and pH (9045).

3.2.2.7 Building 1, Dip Tank Area

In the northwest corner of building 1 is a line of dip tanks. The tanks were used as a chemical processing line that included various acid and water baths for metal aircraft parts.

Three borings (2BB-5-23 through 2BB-5-25) were attempted in the dip tank area. Because of the thick concrete 2BB-5-24 and 2BB-5-25 could not be completed, and were cancelled. Boring 2BB-5-23 was pushed to 25 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), Title 22 metals (6010, 7196, and 7471), and pH (9045).

3.2.2.8 Building 1, Basement

Building 1 is underlain by a basement that consists of three north-south-trending wings connected by a central corridor. The basement is currently used for office space, and for storage of small molds, dies, and a large quantity of engineering drawings. This area was investigated to support the Risk Assessment.

Eighteen borings (2BB-5-26 through 2BB-5-43) were drilled in the basement of Building 1. The borings were pushed to 10 feet below the base of the 22-inch-thick concrete floor of the basement. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471).

3.2.2.9 Area Between Buildings 1 and 2

The area between Buildings 1 and 2 has historically been used as a transportation corridor for pedestrians and small vehicles hauling equipment and materials. This area was investigated to support the Risk Assessment.

Five borings (2BB-5-44 through 2BB-5-48) were drilled at regular spacings in the area between buildings 1 and 2. The borings were pushed to 10 feet bgs, except 2BB-5-46 which met refusal at 2 feet. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471).

4.0 SOIL SAMPLING AND ANALYTICAL METHODS

This section provides the details of the borehole drilling and sampling methods, sample handling and the sample analytical program including QA/QC. Approximately 189 samples were collected in Areas 4 and 5. The field work was conducted during the period from 8 April through 7 May 1997. Areas 4 and 5 soil sampling locations are illustrated on Figure 2.

To accomplish the Phase II Soil Characterization objectives and document proper protocol for the work, a Field Sampling Plan (FSP) was prepared and reviewed with field staff prior to initiating field work. Following the FSP, drilling and sampling methods were conducted in accordance with Kennedy/Jenks Consultants' Standard Operating Guides included in Appendix C. The Guides incorporate industry professional standards for routine sampling, and are designed to meet general regulatory agency requirements and result in litigation-quality work. A Site Health and Safety Plan was also prepared and reviewed with field staff prior to conducting field activities. Field safety meetings were conducted with Kennedy/Jenks Consultants and subcontractor staff at the beginning of each day to review physical and chemical hazards and emergency procedures related to the work.

4.1 Drilling and Soil Sampling

Field activities were initiated with selection of sampling locations, geophysical screening for underground obstructions, and coring of concrete paving to access subsurface soils. Several planned drilling locations as presented to the RWQCB and DTSC in the FSP were moved due to potential underground structures such as pipelines, utility lines, and vaults. The revised plan was approved by the RWQCB and DTSC. Additional geophysical screening and concrete coring were conducted during the drilling program when new borehole locations were added to the investigation.

Sampling was accomplished using direct-push (Geoprobe/Earthprobe), limited access direct-push (XD-1), and hollow-stem auger (CME-85) drilling methods. Direct-push drilling was used on all 10-foot and 25-foot soil borings. The push technology uses a truck-mounted or portable hydraulically driven sampler or core barrel that allows

penetration and standard sampling without the generation of drill cuttings. The sampler for the push tool was fitted with 2-foot-long, 1-inch-diameter Tenite sleeves. No residuals were generated using this equipment. The boreholes were backfilled with a cement-bentonite grout and the surface capped with original material (e.g., concrete, asphalt or native soil). A total of 46 borings throughout Areas 4 and 5 were drilled and sampled using this equipment.

A CME-85 hollow-stem auger drilling rig was used to drill and sample the 50-foot soil borings. Sampling was conducted using a standard split-spoon sampler fitted with 2 1/2-inch-diameter, 6-inch-long brass sleeves. Cuttings from these borings were drummed and the holes were backfilled with a cement-bentonite grout and the surface capped with original material. A total of 4 borings throughout Areas 4 and 5 were drilled and sampled using this technique.

At each of the soil sampling locations, the soil types encountered were logged using the standard Unified Soil Classification System (USCS) and Munsell Color Chart notation. Boring logs are included in Appendix A.

Soil cuttings from hollow-stem auger boreholes were labeled, inventoried, and stored in drums at the Facility for later disposal.

4.2 Sample Handling

Soil samples were collected in Tenite, stainless steel, or brass sleeves and then covered with Teflon™ sheets, capped, labeled, and temporarily stored in ice-cooled containers. For each sampling interval, two or three sleeves (depending on length) were collected for laboratory analysis, one for each of the two mobile laboratories on location and one for the offsite laboratory. Samples were identified with the boring number and depth using the predetermined nomenclature presented in Section 3.1.1.

Samples were immediately labeled, placed in ice-cooled, insulated containers upon collection and transported to the onsite mobile laboratories at the completion of a boring, or transferred to the offsite laboratory by courier at the end of each day. Sample custody was maintained by the field sampler or field supervisor until transferred to one of the

laboratories. Sample custody was documented on standard chain-of-custody forms. Chain-of-custody forms are included with the laboratory reports in Appendix B.

4.3 Sample Analytical Program

Analytical work was conducted by California-certified laboratories using standard EPA test methods and appropriate state-required modifications. Soil samples were analyzed daily in two onsite mobile laboratories. One lab was equipped with two gas chromatography/mass spectrometry (GC/MS) systems with autosamplers capable of performing EPA Method 8260 for VOCs, while a second onsite mobile laboratory analyzed samples for TRPH by EPA Method 418.1 and for diesel by EPA Modified Method 8015. Soil samples were also taken to a stationary laboratory daily by courier for analyses of other COCs, such as semi-volatile organic compounds (SVOCs), metals including hexavalent chromium, PCBs, and others. The stationary laboratory was contracted for additional analyses and for QA/QC backup.

Analytical methods were selected for potential COCs based on the Phase I Preliminary environmental site assessments findings (Kennedy/Jenks Consultants, 1996, 1997a). Analytical methods selected and the number of samples analyzed for each boring are detailed in Table 1 and summarized below:

- All samples, except as noted, were analyzed for VOCs, including gasoline by an onsite mobile laboratory by EPA Method 8260. A limited number of samples collected by the limited access direct-push method were analyzed for VOCs and TRPH at the stationary laboratory by EPA Methods 8010/8020 and 418.1. These samples were collected near the end of the field program after the mobile laboratories had already left the Facility.

- All samples, except as noted, were analyzed for petroleum hydrocarbons by an onsite mobile laboratory by EPA Method 418.1 for TRPH. TRPH detections were also analyzed in the mobile laboratory for hydrocarbon speciation by EPA Method 8015 modified for diesel and heavy hydrocarbons.

- Samples collected at locations with potential metals concerns were analyzed by an offsite laboratory by EPA Methods 6010, 7196, and 7471.

- Samples collected at locations with potential PCB concerns were analyzed by an offsite laboratory by EPA Method 8080.

- Samples collected at locations with potential pesticide concerns were analyzed by an offsite laboratory by EPA Method 8080.

- Ten percent of the mobile laboratory non-detect results by EPA Method 8260 for VOCs were also run by the stationary laboratory as a QA/QC check.

- Ten percent of the mobile laboratory non-detect results by EPA Method 418.1 for TRPH were also run by the stationary laboratory as a QA/QC check.

- Samples with Total VOCs greater than 200 μg/kg detected by EPA Method 8260 in the mobile laboratory were also analyzed for VOCs at the stationary laboratory for confirmation.

5.0 INVESTIGATION RESULTS

This section presents the results of the Phase II Soil Characterization of Areas 4 and 5. The data are discussed by areas in the same order presented in Section 4.0 and Table 1. Each discussion begins with a brief summary of the specific borings associated with each area and the analytical tests performed.

The sections are sub-divided into organic and inorganic data for each location investigated. Organics include the results of analyses for VOCs, petroleum hydrocarbons, SVOCs, PCBs, and pesticides, while the inorganic section focuses on the results of analyses for Title 22 metals. Figures 6A-G, 7A-G, and 8A-G present data for trichloroethene (TCE), 1,1-Dichloroethene (1,1-DCE), and tetrachloroethene (PCE), respectively. Figures 8A-G, 9A, and 10A-G present data for total chromium, arsenic, and lead, respectively. Figures 11A-F summarize the petroleum hydrocarbon detections that occurred around Building 20. Each series of figures includes one to seven members, A through G, that show constituent concentrations detected at the following respective depths: 1 foot, 4 feet, 10 feet, 15 feet and 20 feet, 25 feet and 30 feet, 40 feet, and 50 feet bgs. These compounds and metals were selected as representing the most important COCs detected in Areas 4 and 5 for the ongoing risk assessment and also as the most likely COCs based on the known processes that operated in the area.

Specific Facility-wide ranges of metals in soils and average values are presented in Table 2. References cited for the common range of background metals concentrations in soil include:

- Lindsay, Willard L., 1979, "Chemical Equilibria in Soils," John L. Willey & Sons, New York, New York.

- Shacklette, H.T., and Boerngen, J.G., 1984, "Element Concentrations in Soils and Other Surficial Materials in the Conterminous United States," USGS Professional Paper 1270, U.S. Government Printing Office, Washington, D.C.

Table 3 provides a summary of the VOC results from analyzes performed by the mobile laboratory and stationary laboratory. Table 4 provides TRPH and TPH results from the mobile and stationary laboratories. Table 5 presents the results of the SVOC analyses.

Overall, there were seven background metals detected in all soil samples analyzed (Table 6): 1) barium, 2) total chromium, 3) cobalt, 4) copper, 5) nickel, 6) vanadium, and 7) zinc.

Table 7 presents a summary of analytical results of polychlorinated biphenyls (PCBs) analysis. Table 8 shows the results of pH testing.

5.1 Area 4

Seven soil borings were drilled in Area 4. Six borings were pushed to a depth of 10 feet bgs, and one (2BB-4-3A) was drilled to a depth of 50 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and sampled for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), Title 22 metals (6010, 7196, and 7471) and semivolatile organic compounds (SVOCs) (8270). Approximately 25 soil samples were analyzed in Area 4 (Figure 2). Fifty-six percent of the samples showed concentrations greater than detection limits of methods used, with the exception of background metals that were detected in almost every sample.

5.1.1 Organics

No VOCs exceeded the detection limit of 5 μg/kg in the samples from Area 4 (Table 3).

Petroleum hydrocarbons were detected in 13 soil samples collected from six borings (Table 4). TRPH was detected in the 1-foot and 4-foot bgs samples from borings 2BB-4-1, 2, 3, 4, 5, and 6, and in the 10-foot bgs sample from boring 2BB-4-1 . The concentrations ranged from 12 mg/kg in sample 2BB-4-3-4 to 430 mg/kg in sample 2BB-4-6-4, and averaged 117 mg/kg. TPH-E diesel was not detected in any of the samples. TPH-E motor oil was detected in samples from seven of the 13 samples that contained TRPH. The concentrations ranged from 13 to 40 mg/kg in four samples from

borings 2BB-4-4, 5, and 6, and from 210 to 330 mg/kg in three samples from borings 2BB-4-2 and 3.

Bis(2-ethylhexyl)phthalate and phenol were the only SVOCs detected in samples from Area 4 (Table 5). Bis(2-ethylhexyl)phthalate was detected at 190 µg/kg in sample 2BB-4-3A-40. Phenol was detected at 150 µg/kg in sample 2BB-4-3-1.

5.1.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6).

5.2 Area 5

Forty-three soil borings were drilled and approximately 164 soil samples were analyzed in nine potential areas of concern in Area 5 (Figure 2). Forty-eight percent of the samples showed concentrations greater than detection limits of methods used, with the exception of background metals that were detected in almost every sample. These detections are detailed in the following subsections.

5.2.1 Building 15, Photo Lab

One soil boring, 2BB-5-2, was drilled outside the north wall of Building 15 adjacent to where the photo laboratory was located. The boring was pushed to 10 feet. Soil samples were collected according to the depth sheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), Title 22 metals (6010, 7196, and 7471), and cyanide (9010).

5.2.1.1 Organics

No VOCs exceeded the detection limit of 5 µg/kg in the samples from this area (Table 3).

Petroleum hydrocarbons were detected in one sample from this area. TRPH was detected in sample 2BB-5-2-1 at a concentration of 15 mg/kg (Table 4). TPH-E diesel and motor oil were not detected in any of the samples.

Cyanide was not detected in any of the soil samples from this area, using a detection limit of 0.2 mg/kg.

5.2.1.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6).

5.2.2 Border with International Light Metals

Two borings, 2BB-5-3 and 2BB-5-4, were drilled along the border with the ILM. The borings were drilled to 50 feet bgs using hollow stem auger. Soil samples were collected according to the depth scheme presented in Table 1 and sampled for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), Title 22 metals (6010, 7196, and 7471), and PCBs (8080).

5.2.2.1 Organics

TCE was the only VOC that exceeded the detection limit of 5 μg/kg in the samples from this area, and was detected in only two samples (Table 3). Sample 2BB-5-3-40 contained TCE at a concentration of 10 μg/kg, and sample 2BB-5-4-50 contained TCE at 6.5 μg/kg.

Petroleum hydrocarbons were not detected in any of the samples collected from this area (Table 4).

No PCBs were detected in the soil samples collected from this area (Table 7).

5.2.2.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6).

5.2.3 Western Open Space

Four borings (2BB-5-6 through 2BB-5-9) were drilled at various locations between the buildings. Each boring was pushed to 10 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471).

5.2.3.1 Organics

No VOCs exceeded the detection limit of 5 μg/kg in the samples from this area (Table 3).

Petroleum hydrocarbons were detected in four samples from two borings drilled in this area (Table 4). TRPH was detected at concentrations of 110 mg/kg and 33 mg/kg in samples 2BB-5-8-1 and 2BB-5-8-4, respectively. TRPH was also detected in boring 2BB-5-9 at 35 mg/kg in the 1-foot sample and at 81 mg/kg in the 4-foot sample . TPH-E diesel was not detected in any of the samples. TPH-E motor oil was detected in sample 2BB-5-8-1 at 29 mg/kg and in sample 2BB-5-9-4 at 27 mg/kg.

5.2.3.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6). Lead was reported at a concentration of 59 mg/kg in sample 2BB-5-7-1. This concentration is well below the TTLC of 1,000 mg/kg, but is greater than ten times the 5.0 mg/l STLC (Table 2).

5.2.4 Building 20

All of the borings in the Building 20 area were drilled using direct push. The soil samples were collected according to the depth scheme presented in Table 1. Boring 2BB-5-10 was drilled to 10 feet bgs in the battery recharging area. Soil samples were analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), Title 22 metals (6010, 7196, and 7471), and pH (9045). Boring 2BB-5-11 was drilled to 26 feet bgs near the 3-stage clarifier. Soil samples were analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471). Boring 2BB-5-12 was drilled to 25 feet bgs near the above ground motor oil tank. Soil samples were analyzed for VOCs (8260 or 8010/8020) and petroleum hydrocarbons (418.1 and 8015M). Borings 2BB-5-13 and 2BB-5-14 were drilled to 25 feet bgs. Soil samples were analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), SVOCs (8270), and PCBs (8080). Boring 2BB-5-16 was drilled to 25 feet bgs near the condensation pit. Boring 2BB-5-15 was cancelled because the proposed boring location was inaccessible to the drilling rig. Soil samples from 2BB-5-16 were analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471). Borings 2BB-5-17 through 2BB-5-19 were drilled near the pump island and underground fuel tanks. Borings 2BB-5-18 and 2BB-5-19 were drilled to 25 feet bgs, but 2BB-5-17 was was terminated at 5 feet bgs due to refusal. Soil samples were analyzed for VOCs (8260 or 8010/8020) and petroleum hydrocarbons (418.1 and 8015M).

5.2.4.1 Organics

VOCs were detected in only four samples from two borings drilled in this area (Table 3). Gasoline was detected in samples 2BB-5-13-1 at 5,100,000 μg/kg, 2BB-5-16-7 at 300,000 μg/kg, and 2BB-5-16-10 at 530,000 μg/kg. M,p-xylenes were detected in sample 2BB-5-13-4 at 6.4 μg/kg. In addition to gasoline, four other VOCs were detected in sample 2BB-5-13-1. They include ethylbenzene (11,000 μg/kg), toluene (1,200 μg/kg), m,p-xylenes (75,000 μg/kg), and o-xylene (44,000 ug/kg).

Petroleum hydrocarbons were detected in 13 samples from eight borings in this area. Eight of the 13 detections occurred in samples collected from 1 foot or 4 feet bgs. TRPH was detected in the 13 samples at concentrations ranging from 14 mg/kg in sample 2BB-5-13-15 to 23,000 mg/kg in 2BB-5-16-10, and averaging 3,169 mg/kg. TPH-E diesel was detected in two of the 13 samples that contained TRPH. Sample 2BB-5-16-7 contained 18,000 mg/kg diesel, and sample 2BB-5-16-10 contained 15,000 mg/kg diesel. TPH-E motor oil was detected in five of the 13 samples that contained TRPH. Motor oil was detected at concentrations ranging from 120 mg/kg in sample 2BB-5-19-4 to 1,200 mg/kg in sample 2BB-5-17-4, and averaging 382 mg/kg.

Bis(2-ethylhexyl)phthalate was the only SVOC detected in samples from this area (Table 5). It was detected at a concentration of 150 μg/kg in sample 2BB-5-14-25.

PCBs were detected in two samples collected from this area (Table 8). Aroclor-1260 was detected at 100 μg/kg in sample 2BB-5-14-1, and at 160 μg/kg in sample 2BB-5-14-4.

5.2.4.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6).

The three soil samples collected from boring 2BB-5-10 were tested for pH. The pH values for the 1, 4, and 10-foot samples were 6.4, 7.4, and 8.1, respectively (Table 8).

5.2.5 Salvage Area Behind Building 32

One boring (2BB-5-20) was drilled in the former salvage area behind Building 32. The boring was drilled to 50 feet bgs using a hollow stem auger. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471).

5.2.5.1 Organics

VOCs were detected in two samples from boring 2BB-5-20 (Table 3). The 1-foot sample contained ethylbenzene at 13 µg/kg, m,p-xylenes at 54 µg/kg, and o-xylenes at 21 µg/kg. TCE was detected in sample 2BB-5-20-50 at a concentration of 26 µg/kg.

Petroleum hydrocarbons were detected in four of the seven samples collected from boring 2BB-5-20 (Table 4). TRPH was detected at concentrations of 9,100 mg/kg in the 1-foot sample, 11 mg/kg in the 4-foot sample, 10 mg/kg in the 10-foot sample, and 15 mg/kg in the 30-foot sample. TPH diesel was not detected in any of the samples that contained TRPH. TPH motor oil was detected only in sample 2BB-5-20-1 at 5,900 mg/kg.

5.2.5.2 Inorganics

The background metals barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6). Additional metals, including arsenic, cadmium, and lead, were detected in the 1-foot sample from boring 2BB-5-20. The concentrations were 170 mg/kg for arsenic, 6.7 mg/kg for cadmium, and 2.8 mg/kg for lead. These metals concentrations are below the TTLCs of 500 mg/kg, 100 mg/kg, and 1,000 mg/kg, respectively. The arsenic concentration, however, is above ten times the STLC of 5 mg/l. None of the other samples contained detectable concentrations of these three metals.

5.2.6 Building 1, Paint Booth

Two borings (2BB-5-21 and 2BB-5-22) were drilled in the paint booth area. Both borings were pushed to 25 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), Title 22 metals (6010, 7196, and 7471), SVOCs (8270), and pH (9045).

5.2.6.1 Organics

Three VOCs, 1,1-DCE, PCE, and TCE, were detected in nine of the 12 samples collected from borings 2BB-5-21 and 2BB-5-22 (Table 3). 1,1-DCE was detected in the 15, 20, and 25-foot bgs samples from boring 2BB-5-22 at concentrations of 37, 5.8, and 50 μg/kg, respectively. PCE was detected in samples collected from 1, 4, 10, and 20 feet bgs in boring 2BB-5-21, and 1, 4, 15, 20, and 25 feet bgs in boring 2BB-5-22. The concentrations ranged from 5.6 μg/kg in sample 2BB-5-21-20 to 1200 μg/kg in sample 2BB-5-21-1, and averaged 169 μg/kg. TCE was detected in the same samples as PCE was detected in except 2BB-5-21-1 and 2BB-5-21-20. The concentrations of TCE ranged from 5.4 μg/kg in sample 2BB-5-21-10 to 53 μg/kg in sample 2BB-5-22-25, and averaged 19 μg/kg.

Petroleum hydrocarbons were detected in six of the 12 samples collected from borings 2BB-5-21 and 2BB-5-22 (Table 4). TRPH was detected in all six of the samples in concentrations ranging from 19 mg/kg in sample 2BB-5-21-1 to 57 mg/kg in sample 2BB-5-22-4, and averaging 45 mg/kg.

Several SVOCs were detected in the 1-foot bgs samples from borings 2BB-5-21 and 2BB-5-22 (Table 5). These are coal-tar derivatives.

Compound	Concentration (µg/kg)	
	2BB-5-21-1	2BB-5-22-1
Benz(a)anthracene	230	ND
Benzo(b)fluoranthene	410	ND
Benzo(a)pyrene	360	ND
Chrysene	370	160
Fluoranthene	540	200
Indeno(1,2,3-cd)pyrene	270	ND
Phenanthrene	190	ND
Pyrene	420	170

5.2.6.2 Inorganics

The background metals barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6). In addition, lead was detected in sample 2BB-5-22-1 at a concentration of 44 mg/kg. This concentration is well below the TTLC of 1,000 mg/kg and below ten times the STLC of 5 mg/l.

The soil samples collected from borings 2BB-5-21 and 2BB-5-22 were tested for pH (Table 8). The pH values ranged between 7.4 in sample 2BB-5-22-1 to 8.1 in sample 2BB-5-21-1, and averaged 7.7.

5.2.7 Building 1, Dip Tank Area

Three borings (2BB-5-23 through 2BB-5-25) were attempted in the dip tank area. Because of the thick concrete 2BB-5-24 and 2BB-5-25 could not be completed, and were cancelled. Boring 2BB-5-23 was pushed to 25 feet bgs. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), Title 22 metals (6010, 7196, and 7471), and pH (9045).

5.2.7.1 Organics

TCE was the only VOC detected in the samples from boring 2BB-5-23 (Table 3). TCE was detected at concentrations of 5.7 μg/kg in the 10-foot bgs sample, and 7.2 in the 25-foot bgs sample.

Petroleum hydrocarbons were not detected in any of the soil samples from boring 2BB-5-23 (Table 4).

5.2.7.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6).

pH values for the soil samples in boring 2BB-5-23 ranged from 7.3 in sample 2BB-5-23-4 to 7.9 in sample 2BB-5-23-25, and averaged 7.7 (Table 8).

5.2.8 Building 1, Basement

Eighteen borings (2BB-5-26 through 2BB-5-43) were drilled in the basement of Building 1. The borings were pushed to 10 feet below the base of the 22-inch-thick concrete floor of the basement. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471).

5.2.8.1 Organics

TCE, 1,1-DCE, and PCE were detected in several of the soil samples collected from this area (Table 3). Most of the detections, though not all, occurred in borings drilled in the east and northeast portions of the basement.

TCE was detected in 30 of the 53 soil samples collected from the basement of Building 1 (Table 3). TCE concentrations ranged from 5.2 μg/kg in sample 2BB-5-42-10 to 150

µg/kg in samples 2BB-5-33-4 and 2BB-5-33-10. The average TCE concentration detected in the 30 samples was 42 µg/kg. 1,1-DCE was detected in 17 of the 53 soil samples from this area. The concentrations of 1,1-DCE ranged from 5.5 µg/kg in sample 2BB-5-40-1 to 69 µg/kg in sample 2BB-5-33-4, and averaged 23 µg/kg. PCE was detected in two of the soil samples. The concentrations of PCE were 5 µg/kg in sample 2BB-5-35-1 and 7.3 µg/kg in sample 2BB-5-40-10.

Petroleum hydrocarbons were not detected in any of the soil samples collected in this area (Table 4).

5.2.8.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6).

5.2.9 Area Between Buildings 1 and 2

Five borings (2BB-5-44 through 2BB-5-48) were drilled at regular spacings in the area between buildings 1 and 2. The borings were pushed to 10 feet bgs, except 2BB-5-46 which met refusal at 2 feet. Soil samples were collected according to the depth scheme presented in Table 1 and analyzed for VOCs (8260 or 8010/8020), petroleum hydrocarbons (418.1 and 8015M), and Title 22 metals (6010, 7196, and 7471).

5.2.9.1 Organics

TCE was the only VOC detected in soil samples collected from this area (Table 3). TCE was detected in sample 2BB-5-45-1 at 7.5 µg/kg and in sample 2BB-5-46-1 at 8.8 µg/kg.

Petroleum hydrocarbons were detected in seven of the soil samples collected in this area (Table 4). TRPH was detected in the seven samples at concentrations ranging from 11 mg/kg in sample 2BB-5-45-1 to 190 mg/kg in sample 2BB-5-44-1, and averaging 72 mg/kg. TPH diesel was not detected in any of the samples that contained TRPH. TPH motor oil was detected in three of the samples. The concentrations of

motor oil were 98 mg/kg in sample 2BB-5-45-4, 46 mg/kg in sample 2BB-5-48-1, and 50 mg/kg in sample 2BB-5-48-4. None of the 10-foot bgs samples contained detectable concentrations of petroleum hyrdocarbons.

5.2.9.2 Inorganics

The metals analyses were generally typical of the soils in this area. Barium, chromium, cobalt, copper, nickel, vanadium, and zinc were detected at concentrations that appear typical of background values (Tables 2 and 6).

5.3 Quality Assurance Results

This section includes the results of the field quality assurance (QA) sample analysis, travel blanks and equipment rinsate blanks, the 10 percent of non-detect mobile laboratory VOC and TRPH QA results, and the QA check results on mobile laboratory total VOC concentrations greater than 200 µg/kg. In addition, the RWQCB performed audits of the mobile and stationary laboratories and the RWQCB took soil sample splits. Their results matched extremely well with the mobile laboratory data.

5.3.1 Field QA

Daily travel blanks were analyzed for VOCs (8260) to monitor the possibility of outside contamination of soil samples during transport to the stationary laboratory. Travel blank analytical testing resulted in no detections, indicating the samples were not impacted during transport (Appendix B).

Daily equipment rinsate blanks were analyzed to monitor the potential cross-contamination of soil samples by the sampling equipment. All laboratory analytical results were non-detect, indicating proper cleaning of field equipment between samples (Appendix B).

5.3.2 10 Percent Non-Detect Confirmations

5.3.2.1 10 Percent VOC Non-Detects

As an additional QA check on the results of the mobile laboratory, 10 percent of non-detect EPA Method 8260 results were analyzed at the stationary laboratory using EPA 8010/8020. Comparison of the data are presented in Table 9. The stationary laboratory confirmed the mobile laboratory results by not detecting any VOCs in the samples tested.

5.3.2.2 10 Percent TRPH Non-Detects

As an additional QA check on the results of the mobile laboratory, 10 percent of non-detect EPA Method 418.1 results were analyzed at the stationary laboratory. Comparison of the data are presented in Table 10.

The stationary laboratory results showed detections of TRPH by EPA Method 418.1 in seven out of 17 samples (~41 percent). However, the mobile laboratory used a screening detection limit of 20 mg/kg during the beginning of the program and then, on request by Kennedy/Jenks Consultants, changed to a detection limit of 10 mg/kg. The stationary laboratory used a detection limit of 8 mg/kg. TRPH was detected in the 17 samples at concentrations no greater than 42 mg/kg. This variability is not unreasonable when comparing the results of analyses of separate soil sample sleeves from the same sampling location. Due to the inhomogeneous nature of the sediments, chemical concentrations could vary widely, even within the same 6-inch sample sleeve.

Because of the difficulty inherent in analyzing duplicate soil samples, the QA data are interpreted to show acceptable correlation between the analyses and essentially confirm the mobile laboratory results.

5.3.3 QA Analysis of Total VOC>200 µg/kg

The purpose of the QA analysis of total VOC>200 µg/kg was to confirm the mobile lab screening results. Three soil samples collected from Areas 4 and 5 contained greater

than 200 μg/kg total VOCs, and were analyzed at the stationary labory using EPA Method 8010/8020 (Table 11).

Ethylbenzene, toluene, and xylenes were detected in sample 2BB-5-13-1 by the mobile lab in concentrations of 11,000 μg/kg, 1,200 μg/kg, and 119,000 μg/kg, respectively. Xylenes were detected by the stationary lab in this sample at a much lower concentration of 3.3 μg/kg. In addition, 1,2,4-trimethylbenzene, 1,2,4-trichlorobenzene, and 1,2,3-trichlorobenzene were detected by the stationary lab at concentrations of 2.9 μg/kg, 4.0 μg/kg, and 3.9 μg/kg, respectively.

Samples 2BB-5-33-4 and 2BB-5-33-10 were analyzed at the stationary laboratory because the mobile laboratory detected 1-1, DCE and TCE in cumulative concentrations exceeding 200 μg/kg in both samples. The stationary laboratory only detected TCE in sample 2BB-5-33-10 at a concentration of 8.6 μg/kg.

This variability is not unreasonable when comparing the results of analyses of separate soil sample sleeves from the same sampling location. Due to the inhomogeneous nature of the sediments, chemical concentrations could vary widely, even within the same 6-inch sample sleeve. Because of the difficulty inherent in analyzing duplicate soil samples, the QA data are interpreted to show acceptable correlation between the analyses and essentially confirm the mobile laboratory results.

6.0 CONCLUSIONS

The Phase II Soil Characterization of Areas 4 and 5 was completed according to the Field Sampling Plan (FSP) that was developed from the Phase I environmental site assessments of the Facility and reviewed and approved by the RWQCB and DTSC. The data generated during this program will provide support to develop the risk assessment, function as part of future groundwater investigations, and as input to future remediation and feasibility studies.

Area 4 was investigated as a single area of potential concern. Area 5 was divided into the following nine areas of potential concern which were investigated separately:

- Building 15, Photo Lab
- Border with International Light Metals
- Open Space west of Denker Avenue
- Building 20, Auto Repair Shop
- Salvage Area Behind Building 32
- Building 1, Paint Booth
- Building 1, Dip Tank Area
- Building 1, Basement
- Area Between Buildings 1 and 2

This section of the report begins with a brief description of the field program (Section 6.1), followed by a summary of subsurface soil conditions at the Facility (Section 6.2). Findings regarding areas of concern identified in this study are summarized in Section 6.3. Section 6.4 presents a discussion of other notable findings that were not significant enough to identify an area of concern.

6.1 Field Program

The field program included drilling and geologic logging of 50 soil borings and collecting 189 soil samples in Areas 4 and 5. The soil samples were analyzed for the COCs that could be present in each area of potential concern. The samples were analyzed for VOCs and petroleum hydrocarbons by an onsite state-certified laboratory. Selected

samples also were analyzed at an offsite state-certified stationary laboratory for one or more additional parameters, including, but not limited to, SVOCs, PCBs, metals, cyanide, and pH.

The QA program included blank samples and confirmation analyses of selected soil samples. Analyses of the blank samples showed no indication that soil samples were inadvertently contaminated. Confirmation analyses at a stationary laboratory supported the mobile laboratory analyses. In addition, both the mobile and stationary laboratories were audited by the RWQCB for compliance with analysis procedure methods.

6.2 Subsurface Soils

Extensive information regarding the soils within 50 feet bgs at the Facility was developed from the drilling and geologic logging in the Phase II Soil Characterization. Four distinct subsurface units were identified. Three of these were correlated over the entire Facility, while the fourth pinches out on the northwest and dips below the depth drilled on the eastern portion of the property. The uppermost soils at the Facility consist predominantly of clay and silt. These fine-grained soils are present to about 22 feet bgs on the west and thicken to about 45 feet bgs on the east. Soils below these depths are predominantly sand and silty sand to the 50-foot maximum depth drilled.

6.3 Areas of Concern

Analysis of the results of the Phase II Soil Characterization indicated that Building 20 is the one area of concern within Areas 4 and 5.

Several soil samples collected from the Building 20 borings were impacted with petroleum hydrocarbons. Gasoline was detected in three samples with the concentrations ranging from 300,000 µg/kg to 5,100,000 µg/kg. The gasoline impact detected in the 1-foot bgs sample from boring 2BB-5-13 appears to be limited in extent because it was not detected in the samples from the nearby borings 2BB-5-14 and 2BB-5-12, nor was it detected in deeper samples from boring 2BB-5-13. The gasoline detected in the 7-foot and 10-foot bgs samples from boring 2BB-5-16 appears to be limited in vertical extent because the 15-foot sample did not contain detectable

concentrations of gasoline. The lateral extent of the gasoline impact, however, is not well constrained around boring 2BB-5-16. TRPH was also detected in shallow samples from borings 2BB-5-12, 13, 14, 16, 17, and 19 in concentrations ranging from 14 mg/kg to 23,000 mg/kg. TPH motor oil was detected in shallow samples from borings 2BB-5-16, 17, and 19 in concentrations no greater than 1,200 mg/kg. TPH diesel was detected in the 7-foot and 10-foot samples from boring 2BB-5-16 at 18,000 and 15,000 mg/kg, respectively.

6.4 Summary of Results by Area

6.4.1 Area 4

Analysis of the results of the Phase II Soil Characterization indicated that there are no areas of concern in Area 4, the driveway between Building 66 and the eastern border of the C-6 Facility. While petroleum hydrocarbons were found in many of the samples collected from this area, the detections occurred in shallow samples, and the concentrations were no greater than 430 mg/kg. This area did not contain petroleum hydrocarbons in concentrations, distribution, or frequency of occurrence to be designated as an area of concern.

6.4.2 Border with International Light Metals

Low concentrations of TCE were detected in the 40-foot sample and the 50-foot sample from borings 2BB-5-3 and 2BB-5-4, respectively. The presence of TCE in these samples is consistent with the findings of other soil borings along the border which are described in the Parcel A Phase II Soil Characterization report (Kennedy/Jenks, 1997). The TCE may have migrated from documented sources of TCE impact on the adjacent ILM property.

6.4.3 Building 20

The automotive repair shop, Building 20 was identified as an area of concern. The results of the investigation in this area are discussed in Section 6.3.

6.4.4 Building 1, Basement and Paint Booth

The soil beneath the basement of Building 1, particularly the eastern and northeastern parts, has been impacted with VOCs including TCE, 1,1-DCE, and PCE. The impacts observed in the basement and paint booth borings appear to be the result of releases centered around Building 36 to the north. The results of investigation in the area of Building 36 are described in the Phase II Soil Characterization Report for Parcel A (Kennedy/Jenks, 1997b).

6.4.5 Salvage Area Behind Building 32

Samples collected from boring 2BB-5-20, located in the salvage area north of Building 32, contained petroleum hydrocarbons. While the 1-foot sample contained TRPH at 9,100 mg/kg, the 4, 10, and 30-foot samples contained TRPH no greater than 15 mg/kg. In addition, the 1-foot sample contained arsenic at a concentration of 170 mg/kg as well as low concentrations of cadmium and lead. This area did not contain petroleum hydrocarbons or metals in concentrations, distribution, or frequency of occurrence to be designated as an area of concern.

None of the other areas of potential concern investigated in Area 5 were found to contain COCs at levels such that they were designated areas of concern.

7.0 REFERENCE LIST

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Tables

TABLE 1
SOIL SAMPLING ANALYTICAL PROGRAM FOR AREAS 4 AND 5

McDonnell Douglas Realty Company
C-6 Facility, Los Angeles, California

Area	Location	Sample I D	# of subsurface samples	8260 or 8010/8020	418.1	8015M[1]	Title 22 Metals	Cr (VI)[2]	8270	8080 (PCBs)	pH	Cyanide
4	Driveway east of Bldg. 66	2BB-4-1 -(1,4,10)	3	3	3	3	3	3	3			
4	Driveway east of Bldg. 66	2BB-4-2 -(1,4,10)	3	3	3	2	3	3	3			
4	Driveway east of Bldg. 66	2BB-4-3 -(1,4,10)	3	3	3	2	3	3	3			
4	Driveway east of Bldg. 66	2BB-4-3A -(1,4,10,20,30,40,50)	7	7	7	0	7	7	7			
4	Driveway east of Bldg. 66	2BB-4-4 -(1,4,10)	3	3	3	2	3	3	3			
4	Driveway east of Bldg. 66	2BB-4-5 -(1,4,10)	3	3	3	2	3	3	3			
4	Driveway east of Bldg. 66	2BB-4-6 -(1,4,10)	3	3	3	2	3	3	3			
5	Building 15, photo lab	2BB-5-2 -(1,4,10)	3	3	3	1	3	3				3
5	Border with ILM	2BB-5-3 -(4,10,20,30,40,50)	6	6	6	0	6	6		6		
5	Border with ILM	2BB-5-4 -(4,10,20,30,40,50)	6	6	6	0	6	6		6		
5	Western open space	2BB-5-6 -(1,4,10)	3	3	3	0	3	3				
5	Western open space	2BB-5-7 -(1,4,10)	3	3	3	0	3	3				
5	Western open space	2BB-5-8 -(1,4,10)	3	3	3	2	3	3				
5	Western open space	2BB-5-9 -(1,4,10)	3	3	3	2	3	3				
5	Building 20, auto repair shop	2BB-5-10 -(1,4,10)	3	3	3	2	3	3			3	
5	Building 20, auto repair shop	2BB-5-11 -(1,4,10,15,20,25)	6	6	6	0	6	6				
5	Building 20, auto repair shop	2BB-5-12 -(1,4,10,15,20,25)	6	6	6	3						
5	Building 20, auto repair shop	2BB-5-13 -(1,4,10,15,20,25)	6	6	6	2			6	6		
5	Building 20, auto repair shop	2BB-5-14 -(1,4,10,15,20,25)	6	6	6	1			6	6		
5	Building 20, auto repair shop	2BB-5-16 -(1,4,7,10,15,20,25)	7	7	7	4	7	7				
5	Building 20, auto repair shop	2BB-5-17 -(1,4)	2	2	2	2						
5	Building 20, auto repair shop	2BB-5-18 -(4,10,15,20,25)	5	5	5	0						
5	Building 20, auto repair shop	2BB-5-19 -(4,10,15,20,25)	5	5	5	1	5	5				
5	Salvage area behind Bldg. 32	2BB-5-20 -(1,4,10,20,30,40,50)	7	7	7	3	7	7				
5	Building 1, paint booth	2BB-5-21 -(1,4,10,15,20,25)	6	6	6	3	6	6	6		6	

"Notes follow at end of table."

TABLE 1
SOIL SAMPLING ANALYTICAL PROGRAM FOR AREAS 4 AND 5

McDonnell Douglas Realty Company
C-6 Facility, Los Angeles, California

Area	Location	Sample I D	# of subsurface samples	8260 or 8010/8020	418.1	8015M[1]	Title 22 Metals	Cr (VI)[2]	8270	8080 (PCBs)	pH	Cyanide
5	Building 1, paint booth	2BB-5-22 -(1,4,10,15,20,25)	6	6	6	3	6	6	6		6	
5	Building 1, dip tank area	2BB-5-23 -(1,4,10,15,20,25)	6	6	6	0	6	6			6	
5	Building 1, basement	2BB-5-26 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-27 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-28 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-29 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-30 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-31 -(4,10)	2	2	2	0	2	2				
5	Building 1, basement	2BB-5-32 -(1,4,10)	3	3	3	0	3	2				
5	Building 1, basement	2BB-5-33 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-34 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-35 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-36 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-37 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-38 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-39 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-40 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-41 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-42 -(1,4,10)	3	3	3	0	3	3				
5	Building 1, basement	2BB-5-43 -(1,4,10)	3	3	3	0	3	3				
5	Area between Bldg. 1 and Bldg. 2	2BB-5-44 -(1,4,10)	3	3	3	2	3	3				
5	Area between Bldg. 1 and Bldg. 2	2BB-5-45 -(1,4,10)	3	3	3	2	3	3				
5	Area between Bldg. 1 and Bldg. 2	2BB-5-46 -(1)	1	1	1	0	1	1				
5	Area between Bldg. 1 and Bldg. 2	2BB-5-47 -(1,4,10)	3	3	3	1	3	3				
5	Area between Bldg. 1 and Bldg. 2	2BB-5-48 -(1,4,10)	3	3	3	2	3	3				

NOTES:

Blank (empty) cell indicates analysis was not performed for the given sample.

(1) 8015M analysis was only performed on sampes with a TRPH detection in 418.1.

(2) $CR^{(VI)}$ analysis was only performed on samples with >10 mg/kg total Chromium.

"Notes follow at end of table."

TABLE 2
COMPARISON OF SITE TITLE 22 METALS CONCENTRATIONS IN SOIL SAMPLES
WITH COMMON SOIL CONCENTRATIONS
AND STATE THRESHOLD LIMIT VALUES

McDonnell Douglas Realty Company
C-6 Facility, Los Angeles, California

Tested Inorganic Chemical	Number of Analyses	Number of Detections	Detection Rate	Concentration Detected at C-6 Facility (mg/kg)			Common Range in Soils[a]	CCR TTLC[b] Value	STLC[c] Value
				Min.	Max.	Avg.	(ppm)	(mg/kg)	(mg/l)
Antimony	796	0	0.0%	0	0	0	<1 - 2.6[d]	500	15
Arsenic	796	8	1.0%	12	350	110	1 - 50	500	5
Barium	796	796	100%	7	250	100	100 - 3,000	10,000	100
Beryllium	796	0	0.0%	0	0	0	0.1 - 40	75	0.75
Cadmium	796	4	0.5%	5	9	6	0.01 - 0.7	100	1.0
Chromium (VI)	796	0	0.0%	0	0	0	Not Available	500	560
Chromium Total	796	796	100%	3	150	25	1 - 1,000	2,500	5
Cobalt	796	796	100%	1	47	7	1 - 40	8,000	80
Copper	796	796	100%	1	81	13	2 - 100	2,500	25
Lead	796	11	1.4%	3	72	24	2 - 200	1,000	5
Mercury	796	0	0.0%	0	0	0	<0.01 - 4.6[d]	20	0.2
Molybdenum	796	0	0.0%	0	0	0	<3 - 7[d]	3,500	350
Nickel	796	795	100%	2	140	12	5 - 500	2,000	20
Selenium	796	0	0.0%	0	0	0	0.1 - 2	100	1
Silver	796	0	0.0%	0	0	0	0.01 - 5	500	5
Thallium	796	0	0.0%	0	0	0	2.4 - 31[d]	700	7
Vanadium	796	795	100%	5	66	28	20 - 500	2,400	24
Zinc	796	796	100%	4	120	41	10 - 300	5,000	250

mg/kg = milligrams per kilogram
mg/l = milligrams per liter
ppm = parts per million
(a) *Chemical Equilibria in Soils*. Willard L. Lindsay, John L. Wiley & sons, NY, 1979, unless noted otherwise.
(b) California Code of Regulations (CCR), Title 22, Total Threshold Limit Concentration (TTLC) value. Value set to define a California hazardous waste based on the total concentration.
(c) CCR, Title 22, Soluble Threshold Limit Concentration (STLC) value. Value set to define a California hazardous waste based on leachate concentration.
(d) *Element Concentrations in Soils and Other Surficial Materials of the Conterminious United States.* H. T. Shacklette and J. G. Boerngen, USGS Professional Paper 1270, U.S. Government Printing Office, Washington, 1984.

TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Dibromochloromethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane (Freon 12)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	1,1-Dichloroethene (1,1-DCE)	cis-1,2-Dichloroethene (c-1,2-DCE)	trans 1,2-Dichloroethene (t-1,2-DCE)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene
Detection Limit (ug/kg)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
4	2BB-4-1-1	1																							
4	2BB-4-1-4	4																							
4	2BB-4-1-10	10																							
4	2BB-4-2-1	1																							
4	2BB-4-2-4	4																							
4	2BB-4-2-10	10																							
4	2BB-4-3-1	1																							
4	2BB-4-3-4	4																							
4	2BB-4-3-10	10																							
4	2BB-4-3A-1	1																							
4	2BB-4-3A-4	4																							
4	2BB-4-3A-10	10																							
4	2BB-4-3A-20	20																							
4	2BB-4-3A-30	30																							
4	2BB-4-3A-40	40																							
4	2BB-4-3A-50	50																							
4	2BB-4-4-1	1																							
4	2BB-4-4-4	4																							
4	2BB-4-4-10	10																							
4	2BB-4-5-1	1																							
4	2BB-4-5-4	4																							
4	2BB-4-5-10	10																							
4	2BB-4-6-1	1																							
4	2BB-4-6-4	4																							
4	2BB-4-6-10	10																							
5	2BB-5-2-1	1																							

Notes follow at end of table.

TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Methylene chloride (Dichloromethane)	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane (1,1,1-TCA)	1,1,2-Trichloroethane (1,1,2-TCA)	Trichloroethene (TCE)	Trichlorofluoromethane (Freon 11)	m,p-Xylenes	o-Xylene	Vinyl chloride	TPH as Gasoline
	Detection Limit (ug/kg)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1,000
4	2BB-4-1-1	1													
4	2BB-4-1-4	4													
4	2BB-4-1-10	10													
4	2BB-4-2-1	1													
4	2BB-4-2-4	4													
4	2BB-4-2-10	10													
4	2BB-4-3-1	1													
4	2BB-4-3-4	4													
4	2BB-4-3-10	10													
4	2BB-4-3A-1	1													
4	2BB-4-3A-4	4													
4	2BB-4-3A-10	10													
4	2BB-4-3A-20	20													
4	2BB-4-3A-30	30													
4	2BB-4-3A-40	40													
4	2BB-4-3A-50	50													
4	2BB-4-4-1	1													
4	2BB-4-4-4	4													
4	2BB-4-4-10	10													
4	2BB-4-5-1	1													
4	2BB-4-5-4	4													
4	2BB-4-5-10	10													
4	2BB-4-6-1	1													
4	2BB-4-6-4	4													
4	2BB-4-6-10	10													
5	2BB-5-2-1	1													

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Dibromochloromethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane (Freon 12)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	1,1-Dichloroethene (1,1-DCE)	cis-1,2-Dichloroethene (c-1,2-DCE)	trans 1,2-Dichloroethene (t-1,2-DCE)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene
Detection Limit (ug/kg)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5	2BB-5-2-4	4																							
5	2BB-5-2-10	10																							
5	2BB-5-3-4	4																							
5	2BB-5-3-10	10																							
5	2BB-5-3-20	20																							
5	2BB-5-3-30	30																							
5	2BB-5-3-40	40																							
5	2BB-5-3-50	50																							
5	2BB-5-4-4	4																							
5	2BB-5-4-10	10																							
5	2BB-5-4-20	20																							
5	2BB-5-4-30	30																							
5	2BB-5-4-40	40																							
5	2BB-5-4-50	50																							
5	2BB-5-6-1	1																							
5	2BB-5-6-4	4																							
5	2BB-5-6-10	10																							
5	2BB-5-7-1	1																							
5	2BB-5-7-4	4																							
5	2BB-5-7-10	10																							
5	2BB-5-8-1	1																							
5	2BB-5-8-4	4																							
5	2BB-5-8-10	10																							
5	2BB-5-9-1	1																							
5	2BB-5-9-4	4																							

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Methylene chloride (Dichloromethane)	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane (1,1,1-TCA)	1,1,2-Trichloroethane (1,1,2-TCA)	Trichloroethene (TCE)	Trichlorofluoromethane (Freon 11)	m,p-Xylenes	o-Xylene	Vinyl chloride	TPH as Gasoline
Detection Limit (ug/kg)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1,000
5	2BB-5-2-4	4													
5	2BB-5-2-10	10													
5	2BB-5-3-4	4													
5	2BB-5-3-10	10													
5	2BB-5-3-20	20													
5	2BB-5-3-30	30													
5	2BB-5-3-40	40								10					
5	2BB-5-3-50	50													
5	2BB-5-4-4	4													
5	2BB-5-4-10	10													
5	2BB-5-4-20	20													
5	2BB-5-4-30	30													
5	2BB-5-4-40	40													
5	2BB-5-4-50	50								6.5					
5	2BB-5-6-1	1													
5	2BB-5-6-4	4													
5	2BB-5-6-10	10													
5	2BB-5-7-1	1													
5	2BB-5-7-4	4													
5	2BB-5-7-10	10													
5	2BB-5-8-1	1													
5	2BB-5-8-4	4													
5	2BB-5-8-10	10													
5	2BB-5-9-1	1													
5	2BB-5-9-4	4													

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Dibromochloromethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane (Freon 12)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	1,1-Dichloroethene (1,1-DCE)	cis-1,2-Dichloroethene (c-1,2-DCE)	trans 1,2-Dichloroethene (t-1,2-DCE)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene
Detection Limit (ug/kg)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5	2BB-5-9-10	10																							
5	2BB-5-10-1	1																							
5	2BB-5-10-4	4																							
5	2BB-5-10-10	10																							
5	2BB-5-11-1	1																							
5	2BB-5-11-4	4																							
5	2BB-5-11-10	10																							
5	2BB-5-11-15	15																							
5	2BB-5-11-20	20																							
5	2BB-5-11-25	25																							
5	2BB-5-12-1	1																							
5	2BB-5-12-4	4																							
5	2BB-5-12-10	10																							
5	2BB-5-12-15	15																							
5	2BB-5-12-20	20																							
5	2BB-5-12-25	25																							
5	2BB-5-13-1	1																							11000
5	2BB-5-13-4	4																							
5	2BB-5-13-10	10																							
5	2BB-5-13-15	15																							
5	2BB-5-13-20	20																							
5	2BB-5-13-25	25																							
5	2BB-5-14-1[B]	1																							
5	2BB-5-14-4	4																							
5	2BB-5-14-10	10																							

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Methylene chloride (Dichloromethane)	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane (1,1,1-TCA)	1,1,2-Trichloroethane (1,1,2-TCA)	Trichloroethene (TCE)	Trichlorofluoromethane (Freon 11)	m,p-Xylenes	o-Xylene	Vinyl chloride	TPH as Gasoline
	Detection Limit (ug/kg)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1,000
5	2BB-5-9-10	10													
5	2BB-5-10-1	1													
5	2BB-5-10-4	4													
5	2BB-5-10-10	10													
5	2BB-5-11-1	1													
5	2BB-5-11-4	4													
5	2BB-5-11-10	10													
5	2BB-5-11-15	15													
5	2BB-5-11-20	20													
5	2BB-5-11-25	25													
5	2BB-5-12-1	1													
5	2BB-5-12-4	4													
5	2BB-5-12-10	10													
5	2BB-5-12-15	15													
5	2BB-5-12-20	20													
5	2BB-5-12-25	25													
5	2BB-5-13-1	1					1200					75000	44000		5100000
5	2BB-5-13-4	4										6.4			
5	2BB-5-13-10	10													
5	2BB-5-13-15	15													
5	2BB-5-13-20	20													
5	2BB-5-13-25	25													
5	2BB-5-14-1[(B)]	1													
5	2BB-5-14-4	4													
5	2BB-5-14-10	10													

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Dibromochloromethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane (Freon 12)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	1,1-Dichloroethene (1,1-DCE)	cis-1,2-Dichloroethene (c-1,2-DCE)	trans 1,2-Dichloroethene (t-1,2-DCE)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene
Detection Limit (ug/kg)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5	2BB-5-14-15	15																							
5	2BB-5-14-20	20																							
5	2BB-5-14-25	25																							
5	2BB-5-16-1	1																							
5	2BB-5-16-4	4																							
5	2BB-5-16-7	7																							
5	2BB-5-16-10	10																							
5	2BB-5-16-15	15																							
5	2BB-5-16-20	20																							
5	2BB-5-16-25	25																							
5	2BB-5-17-1	1																							
5	2BB-5-17-4	4																							
5	2BB-5-18-6	6																							
5	2BB-5-18-10	10																							
5	2BB-5-18-15	15																							
5	2BB-5-18-20	20																							
5	2BB-5-18-25	25																							
5	2BB-5-19-4	4																							
5	2BB-5-19-10	10																							
5	2BB-5-19-15	15																							
5	2BB-5-19-20	20																							
5	2BB-5-19-25	25																							
5	2BB-5-20-1	1																							13
5	2BB-5-20-4	4																							
5	2BB-5-20-10	10																							

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Methylene chloride (Dichloromethane)	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane (1,1,1-TCA)	1,1,2-Trichloroethane (1,1,2-TCA)	Trichloroethene (TCE)	Trichlorofluoromethane (Freon 11)	m,p-Xylenes	p-Xylene	Vinyl chloride	TPH as Gasoline
Detection Limit (ug/kg)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1,000
5	2BB-5-14-15	15													
5	2BB-5-14-20	20													
5	2BB-5-14-25	25													
5	2BB-5-16-1	1													
5	2BB-5-16-4	4													
5	2BB-5-16-7	7													300000
5	2BB-5-16-10	10													530000
5	2BB-5-16-15	15													
5	2BB-5-16-20	20													
5	2BB-5-16-25	25													
5	2BB-5-17-1	1													
5	2BB-5-17-4	4													
5	2BB-5-18-6	6													
5	2BB-5-18-10	10													
5	2BB-5-18-15	15													
5	2BB-5-18-20	20													
5	2BB-5-18-25	25													
5	2BB-5-19-4	4													
5	2BB-5-19-10	10													
5	2BB-5-19-15	15													
5	2BB-5-19-20	20													
5	2BB-5-19-25	25													
5	2BB-5-20-1	1										54	21		
5	2BB-5-20-4	4													
5	2BB-5-20-10	10													

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Dibromochloromethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane (Freon 12)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	1,1-Dichloroethene (1,1-DCE)	cis-1,2-Dichloroethene (c-1,2-DCE)	trans 1,2-Dichloroethene (t-1,2-DCE)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene
Detection Limit (ug/kg)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5	2BB-5-20-20	20																							
5	2BB-5-20-30	30																							
5	2BB-5-20-40	40																							
5	2BB-5-20-50	50																							
5	2BB-5-21-1	1																							
5	2BB-5-21-4	4																							
5	2BB-5-21-10	10																							
5	2BB-5-21-15	15																							
5	2BB-5-21-20	20																							
5	2BB-5-21-25	25																							
5	2BB-5-22-1	1																							
5	2BB-5-22-4	4																							
5	2BB-5-22-10	10																							
5	2BB-5-22-15	15																	37						
5	2BB-5-22-20	20																	5.8						
5	2BB-5-22-25	25																	50						
5	2BB-5-23-1	1																							
5	2BB-5-23-4	4																							
5	2BB-5-23-10	10																							
5	2BB-5-23-15	15																							
5	2BB-5-23-20	20																							
5	2BB-5-23-25	25																							
5	2BB-5-26-1	1																							
5	2BB-5-26-4	4																							
5	2BB-5-26-10	10																							

Notes follow at end of table.

TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Methylene chloride (Dichloromethane)	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane (1,1,1-TCA)	1,1,2-Trichloroethane (1,1,2-TCA)	Trichloroethene (TCE)	Trichlorofluoromethane (Freon 11)	m,p-Xylenes	o-Xylene	Vinyl chloride	TPH as Gasoline
	Detection Limit (ug/kg)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1,000
5	2BB-5-20-20	20													
5	2BB-5-20-30	30													
5	2BB-5-20-40	40													
5	2BB-5-20-50	50								26					
5	2BB-5-21-1	1				1200									
5	2BB-5-21-4	4				160				12					
5	2BB-5-21-10	10				12				5.4					
5	2BB-5-21-15	15													
5	2BB-5-21-20	20				5.6									
5	2BB-5-21-25	25													
5	2BB-5-22-1	1				32				11					
5	2BB-5-22-4	4				53				17					
5	2BB-5-22-10	10													
5	2BB-5-22-15	15				22				44					
5	2BB-5-22-20	20				9.9				25					
5	2BB-5-22-25	25				30				53					
5	2BB-5-23-1	1													
5	2BB-5-23-4	4													
5	2BB-5-23-10	10								5.7					
5	2BB-5-23-15	15													
5	2BB-5-23-20	20													
5	2BB-5-23-25	25								7.2					
5	2BB-5-26-1	1													
5	2BB-5-26-4	4								9.2					
5	2BB-5-26-10	10								7.5					

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Dibromochloromethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane (Freon 12)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	1,1-Dichloroethene (1,1-DCE)	cis-1,2-Dichloroethene (c-1,2-DCE)	trans 1,2-Dichloroethene (t-1,2-DCE)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene
Detection Limit (ug/kg)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5	2BB-5-27-1	1																							
5	2BB-5-27-4	4																							
5	2BB-5-27-10	10																							
5	2BB-5-28-1	1																							
5	2BB-5-28-4	4																							
5	2BB-5-28-10	10																							
5	2BB-5-29-1	1																							
5	2BB-5-29-4	4																							
5	2BB-5-29-10	10																							
5	2BB-5-30-1	1																							
5	2BB-5-30-4	4																							
5	2BB-5-30-10	10																	5.7						
5	2BB-5-31-4	4																							
5	2BB-5-31-10	10																							
5	2BB-5-32-1	1																							
5	2BB-5-32-4	4																							
5	2BB-5-32-10	10																							
5	2BB-5-33-1	1																	40						
5	2BB-5-33-4	4																	69						
5	2BB-5-33-10	10																	63						
5	2BB-5-34-1	1																	13						
5	2BB-5-34-4	4																	27						
5	2BB-5-34-10	10																	20						
5	2BB-5-35-1	1																	7.3						
5	2BB-5-35-4	4																	18						

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Methylene chloride (Dichloromethane)	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane (1,1,1-TCA)	1,1,2-Trichloroethane (1,1,2-TCA)	Trichloroethene (TCE)	Trichlorofluoromethane (Freon 11)	m,p-Xylenes	o-Xylene	Vinyl chloride	TPH as Gasoline
	Detection Limit (ug/kg)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1,000
5	2BB-5-27-1	1													
5	2BB-5-27-4	4													
5	2BB-5-27-10	10								8.3					
5	2BB-5-28-1	1													
5	2BB-5-28-4	4													
5	2BB-5-28-10	10													
5	2BB-5-29-1	1													
5	2BB-5-29-4	4													
5	2BB-5-29-10	10													
5	2BB-5-30-1	1													
5	2BB-5-30-4	4								8.1					
5	2BB-5-30-10	10								16					
5	2BB-5-31-4	4													
5	2BB-5-31-10	10													
5	2BB-5-32-1	1													
5	2BB-5-32-4	4								6.2					
5	2BB-5-32-10	10													
5	2BB-5-33-1	1								85					
5	2BB-5-33-4	4								150					
5	2BB-5-33-10	10								150					
5	2BB-5-34-1	1								32					
5	2BB-5-34-4	4								76					
5	2BB-5-34-10	10								69					
5	2BB-5-35-1	1				5.0				49					
5	2BB-5-35-4	4								45					

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Dibromochloromethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane (Freon 12)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	1,1-Dichloroethene (1,1-DCE)	cis-1,2-Dichloroethene (c-1,2-DCE)	trans 1,2-Dichloroethene (t-1,2-DCE)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene
Detection Limit (ug/kg)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5	2BB-5-35-10	10																	30						
5	2BB-5-36-1	1																	13						
5	2BB-5-36-4	4																	5.6						
5	2BB-5-36-10	10																	20						
5	2BB-5-37-1	1																							
5	2BB-5-37-4	4																							
5	2BB-5-37-10	10																	11						
5	2BB-5-38-1	1																							
5	2BB-5-38-4	4																							
5	2BB-5-38-10	10																							
5	2BB-5-39-1	1																							
5	2BB-5-39-4	4																							
5	2BB-5-39-10	10																							
5	2BB-5-40-1	1																	5.5						
5	2BB-5-40-4	4																							
5	2BB-5-40-10	10																	35						
5	2BB-5-41-1	1																							
5	2BB-5-41-4	4																							
5	2BB-5-41-10	10																	15						
5	2BB-5-42-1	1																							
5	2BB-5-42-4	4																							
5	2BB-5-42-10	10																							
5	2BB-5-43-1	1																							
5	2BB-5-43-4	4																							
5	2BB-5-43-10	10																							

Notes follow at end of table.

TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Methylene chloride (Dichloromethane)	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane (1,1,1-TCA)	1,1,2-Trichloroethane (1,1,2-TCA)	Trichloroethene (TCE)	Trichlorofluoromethane (Freon 11)	m,p-Xylenes	o-Xylene	Vinyl chloride	TPH as Gasoline
	Detection Limit (ug/kg)		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1,000
5	2BB-5-35-10	10								110					
5	2BB-5-36-1	1								58					
5	2BB-5-36-4	4								25					
5	2BB-5-36-10	10								71					
5	2BB-5-37-1	1								6.1					
5	2BB-5-37-4	4													
5	2BB-5-37-10	10								26					
5	2BB-5-38-1	1													
5	2BB-5-38-4	4													
5	2BB-5-38-10	10								8.3					
5	2BB-5-39-1	1								11					
5	2BB-5-39-4	4								9.8					
5	2BB-5-39-10	10								39					
5	2BB-5-40-1	1								18					
5	2BB-5-40-4	4								8.9					
5	2BB-5-40-10	10				7.3				110					
5	2BB-5-41-1	1													
5	2BB-5-41-4	4													
5	2BB-5-41-10	10								22					
5	2BB-5-42-1	1													
5	2BB-5-42-4	4													
5	2BB-5-42-10	10								5.2					
5	2BB-5-43-1	1													
5	2BB-5-43-4	4													
5	2BB-5-43-10	10								7.4					

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Dibromochloromethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane (Freon 12)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	1,1-Dichloroethene (1,1-DCE)	cis-1,2-Dichloroethene (c-1,2-DCE)	trans 1,2-Dichloroethene (t-1,2-DCE)	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene
Detection Limit (ug/kg)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
5	2BB-5-44-1	1																							
5	2BB-5-44-4	4																							
5	2BB-5-44-10	10																							
5	2BB-5-45-1	1																							
5	2BB-5-45-4	4																							
5	2BB-5-45-10	10																							
5	2BB-5-46-1	1																							
5	2BB-5-47-1	1																							
5	2BB-5-47-4	4																							
5	2BB-5-47-10	10																							
5	2BB-5-48-1	1																							
5	2BB-5-48-4	4																							
5	2BB-5-48-10	10																							

Shaded cell indicates constituent concentration did not exceed detection limit.
Blank cell indicates sample was not analyzed for that constituent.

Notes follow at end of table.

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TABLE 3

RESULTS OF LABORATORY ANALYSES FOR VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8260)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Methylene chloride (Dichloromethane)	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (PCE)	Toluene	1,1,1-Trichloroethane (1,1,1-TCA)	1,1,2-Trichloroethane (1,1,2-TCA)	Trichloroethene (TCE)	Trichlorofluoromethane (Freon 11)	m,p-Xylenes	p-Xylene	Vinyl chloride	TPH as Gasoline
Detection Limit (ug/kg)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1,000
5	2BB-5-44-1	1													
5	2BB-5-44-4	4													
5	2BB-5-44-10	10													
5	2BB-5-45-1	1								7.5					
5	2BB-5-45-4	4													
5	2BB-5-45-10	10													
5	2BB-5-46-1	1								8.8					
5	2BB-5-47-1	1													
5	2BB-5-47-4	4													
5	2BB-5-47-10	10													
5	2BB-5-48-1	1													
5	2BB-5-48-4	4													
5	2BB-5-48-10	10													

Shaded cell indicates constituent concentration did not exceed detection limit.
Blank cell indicates sample was not analyzed for that constituent.

Notes follow at end of table.

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TABLE 4

RESULTS OF PETROLEUM HYDROCARBON ANALYSES
(EPA Methods 418.1/8015M)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	TRPH (EPA 418.1)	TPH-E Diesel (EPA 8015M)	TPH-E Motor Oil (EPA 8015M)
	Detection Limit (mg/kg)		20	10	10
4	2BB-4-1-1	1	28		
4	2BB-4-1-4	4	28		
4	2BB-4-1-10	10	32		
4	2BB-4-2-1	1	180		250
4	2BB-4-2-4	4	110		210
4	2BB-4-2-10	10			
4	2BB-4-3-1	1	400		330
4	2BB-4-3-4	4	12		
4	2BB-4-3-10	10			
4	2BB-4-3A-1	1			
4	2BB-4-3A-4	4			
4	2BB-4-3A-10	10			
4	2BB-4-3A-20	20			
4	2BB-4-3A-30	30			
4	2BB-4-3A-40	40			
4	2BB-4-3A-50	50			
4	2BB-4-4-1	1	59		19
4	2BB-4-4-4	4	17		
4	2BB-4-4-10	10			
4	2BB-4-5-1	1	36		13
4	2BB-4-5-4	4	110		40
4	2BB-4-5-10	10			
4	2BB-4-6-1	1	74		21
4	2BB-4-6-4	4	430		
4	2BB-4-6-10	10			
5	2BB-5-2-1	1	15		
5	2BB-5-2-4	4			
5	2BB-5-2-10	10			
5	2BB-5-3-4	4			
5	2BB-5-3-10	10			
5	2BB-5-3-20	20			
5	2BB-5-3-30	30			
5	2BB-5-3-40	40			
5	2BB-5-3-50	50			
5	2BB-5-4-4	4			
5	2BB-5-4-10	10			

Notes follow at end of table.

g:\mcd-d\Table4

TABLE 4

RESULTS OF PETROLEUM HYDROCARBON ANALYSES
(EPA Methods 418.1/8015M)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	TRPH (EPA 418.1)	TPH-E Diesel (EPA 8015M)	TPH-E Motor Oil (EPA 8015M)
	Detection Limit (mg/kg)		20	10	10
5	2BB-5-4-20	20			
5	2BB-5-4-30	30			
5	2BB-5-4-40	40			
5	2BB-5-4-50	50			
5	2BB-5-6-1	1			
5	2BB-5-6-4	4			
5	2BB-5-6-10	10			
5	2BB-5-7-1	1			
5	2BB-5-7-4	4			
5	2BB-5-7-10	10			
5	2BB-5-8-1	1	110		29
5	2BB-5-8-4	4	33		
5	2BB-5-8-10	10			
5	2BB-5-9-1	1	35		
5	2BB-5-9-4	4	81		27
5	2BB-5-9-10	10			
5	2BB-5-10-1	1	32		
5	2BB-5-10-4	4	20		
5	2BB-5-10-10	10			
5	2BB-5-11-1	1			
5	2BB-5-11-4	4			
5	2BB-5-11-10	10			
5	2BB-5-11-15	15			
5	2BB-5-11-20	20			
5	2BB-5-11-25	25			
5	2BB-5-12-1	1	22		
5	2BB-5-12-4	4			
5	2BB-5-12-10	10	26		
5	2BB-5-12-15	15			
5	2BB-5-12-20	20	23		
5	2BB-5-12-25	25			
5	2BB-5-13-1	1	1700		
5	2BB-5-13-4	4			
5	2BB-5-13-10	10			
5	2BB-5-13-15	15	14		
5	2BB-5-13-20	20			

Notes follow at end of table.

TABLE 4

RESULTS OF PETROLEUM HYDROCARBON ANALYSES
(EPA Methods 418.1/8015M)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	TRPH (EPA 418.1)	TPH-E Diesel (EPA 8015M)	TPH-E Motor Oil (EPA 8015M)
	Detection Limit (mg/kg)		20	10	10
5	2BB-5-13-25	25			
5	2BB-5-14-1	1	75		
5	2BB-5-14-4	4			
5	2BB-5-14-10	10			
5	2BB-5-14-15	15			
5	2BB-5-14-25	25			
5	2BB-5-16-1	1	410		200
5	2BB-5-16-4	4	440		140
5	2BB-5-16-7	7	6200	18000	
5	2BB-5-16-10	10	23000	15000	
5	2BB-5-16-15	15			
5	2BB-5-16-20	20			
5	2BB-5-16-25	25			
5	2BB-5-17-1	1	4300		250
5	2BB-5-17-4	4	4800		1200
5	2BB-5-18-5	5			
5	2BB-5-18-10	10			
5	2BB-5-18-15	15			
5	2BB-5-18-20	20			
5	2BB-5-18-25	25			
5	2BB-5-19-4	4	190		120
5	2BB-5-19-10	10			
5	2BB-5-19-15	15			
5	2BB-5-19-20	20			
5	2BB-5-19-25	25			
5	2BB-5-20-1	1	9100		5,900
5	2BB-5-20-4	4	11		
5	2BB-5-20-10	10	10		
5	2BB-5-20-20	20			
5	2BB-5-20-30	30	15		
5	2BB-5-20-40	40			
5	2BB-5-20-50	50			
5	2BB-5-21-1	1	19		
5	2BB-5-21-4	4			
5	2BB-5-21-10	10	48		
5	2BB-5-21-15	15	45		

Notes follow at end of table.

TABLE 4

RESULTS OF PETROLEUM HYDROCARBON ANALYSES
(EPA Methods 418.1/8015M)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	TRPH (EPA 418.1)	TPH-E Diesel (EPA 8015M)	TPH-E Motor Oil (EPA 8015M)
Detection Limit (mg/kg)			20	10	10
5	2BB-5-21-20	20			
5	2BB-5-21-25	25			
5	2BB-5-22-1	1			
5	2BB-5-22-4	4	57		
5	2BB-5-22-10	10			
5	2BB-5-22-15	15	45		
5	2BB-5-22-20	20			
5	2BB-5-22-25	25	54		
5	2BB-5-23-1	1			
5	2BB-5-23-4	4			
5	2BB-5-23-10	10			
5	2BB-5-23-15	15			
5	2BB-5-23-20	20			
5	2BB-5-23-25	25			
5	2BB-5-26-1	1			
5	2BB-5-26-4	4			
5	2BB-5-26-10	10			
5	2BB-5-27-1	1			
5	2BB-5-27-4	4			
5	2BB-5-27-10	10			
5	2BB-5-28-1	1			
5	2BB-5-28-4	4			
5	2BB-5-28-10	10			
5	2BB-5-29-1	1			
5	2BB-5-29-4	4			
5	2BB-5-29-10	10			
5	2BB-5-30-1	1			
5	2BB-5-30-4	4			
5	2BB-5-30-10	10			
5	2BB-5-31-4	4			
5	2BB-5-31-10	10			
5	2BB-5-32-1	1			
5	2BB-5-32-4	4			
5	2BB-5-32-10	10			
5	2BB-5-33-1	1			
5	2BB-5-33-4	4			

Notes follow at end of table.

TABLE 4

RESULTS OF PETROLEUM HYDROCARBON ANALYSES
(EPA Methods 418.1/8015M)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	TRPH (EPA 418.1)	TPH-E Diesel (EPA 8015M)	TPH-E Motor Oil (EPA 8015M)
	Detection Limit (mg/kg)		20	10	10
5	2BB-5-33-10	10			
5	2BB-5-34-1	1			
5	2BB-5-34-4	4			
5	2BB-5-34-10	10			
5	2BB-5-35-1	1			
5	2BB-5-35-10	10			
5	2BB-5-36-1	1			
5	2BB-5-36-4	4			
5	2BB-5-36-10	10			
5	2BB-5-37-1	1			
5	2BB-5-37-4	4			
5	2BB-5-37-10	10			
5	2BB-5-38-1	1			
5	2BB-5-38-4	4			
5	2BB-5-38-10	10			
5	2BB-5-39-1	1			
5	2BB-5-39-4	4			
5	2BB-5-39-10	10			
5	2BB-5-40-1	1			
5	2BB-5-40-4	4			
5	2BB-5-40-10	10			
5	2BB-5-41-1	1			
5	2BB-5-41-4	4			
5	2BB-5-41-10	10			
5	2BB-5-42-1	1			
5	2BB-5-42-4	4			
5	2BB-5-42-10	10			
5	2BB-5-42-10	10			
5	2BB-5-43-1	1			
5	2BB-5-43-4	4			
5	2BB-5-43-10	10			
5	2BB-5-44-1	1	190		
5	2BB-5-44-4	4	100		
5	2BB-5-44-10	10			
5	2BB-5-45-1	1	11		
5	2BB-5-45-4	4	84		98

Notes follow at end of table.

TABLE 4

RESULTS OF PETROLEUM HYDROCARBON ANALYSES
(EPA Methods 418.1/8015M)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	TRPH (EPA 418.1)	TPH-E Diesel (EPA 8015M)	TPH-E Motor Oil (EPA 8015M)
	Detection Limit (mg/kg)		20	10	10
5	2BB-5-45-10	10			
5	2BB-5-46-1	1			
5	2BB-5-47-1	1			
5	2BB-5-47-4	4	20		
5	2BB-5-47-10	10			
5	2BB-5-48-1	1	32		46
5	2BB-5-48-4	4	66		50
5	2BB-5-48-10	10			

Shaded cell indicates constituent concentration did not exceed detection limit.

Blank cell indicates sample was not analyzed for that constituent.

Notes follow at end of table.

TABLE 5

RESULTS OF SEMI-VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8270)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Benzidine	Benzoic acid	Benz(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(a)pyrene	Benzyl alcohol	Bis(2-chloroethoxy)methane	Bis(2-chloroethyl)ether	Bis(2-chloroisopropyl)ether	Bis(2-ethylhexyl)phthalate	4-Bromophenyl phenyl ether	Butyl benzyl phthalate	4-Chloroaniline	2-Chloronaphthalene	4-Chloro-3-methylphenol	2-Chlorophenol	4-Chlorophenyl phenyl ether	Chrysene	Dibenz(a,h)anthracene
Detection Limit (ug/kg)			100	100	100	100	500	250	100	250	250	250	250	100	100	100	100	100	100	100	100	100	100	100	100	100	100
4	2BB-4-1-1	1																									
4	2BB-4-1-4	4																									
4	2BB-4-1-10	10																									
4	2BB-4-2-1	1																									
4	2BB-4-2-4	4																									
4	2BB-4-2-10	10																									
4	2BB-4-3-1	1																									
4	2BB-4-3-4	4																									
4	2BB-4-3-10	10																									
4	2BB-4-3A-1	1																									
4	2BB-4-3A-4	4																									
4	2BB-4-3A-10	10																									
4	2BB-4-3A-20	20																									
4	2BB-4-3A-30	30																									
4	2BB-4-3A-40	40																190									
4	2BB-4-3A-50	50																									
4	2BB-4-4-1	1																									
4	2BB-4-4-4	4																									
4	2BB-4-4-10	10																									
4	2BB-4-5-1	1																									
4	2BB-4-5-4	4																									
4	2BB-4-5-10	10																									
4	2BB-4-6-1	1																									
4	2BB-4-6-4	4																									
4	2BB-4-6-10	10																									
5	2BB-5-13-1	1																									
5	2BB-5-13-4	4																									
5	2BB-5-13-10	10																									
5	2BB-5-13-15	15																									
5	2BB-5-13-20	20																									
5	2BB-5-13-25	25																									

Notes follow at end of table.

g:\mcd-d\Table5

TABLE 5

RESULTS OF SEMI-VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8270)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Dibenzofuran	Di-n-butyl phthalate	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichlorobenzene	3,3'-Dichlorobenzidine	2,4-Dichlorophenol	Diethyl phthalate	2,4-Dimethylphenol	Dimethyl phthalate	4,6-Dinitro-2-methylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone	2-Methylnaphthalene	2-Methylphenol	4-Methylphenol
Detection Limit (ug/kg)			100	250	100	100	100	100	100	100	100	100	100	100	250	250	250	100	100	100	100	100	100	250	100	100	100	100
4	2BB-4-1-1	1																										
4	2BB-4-1-4	4																										
4	2BB-4-1-10	10																										
4	2BB-4-2-1	1																										
4	2BB-4-2-4	4																										
4	2BB-4-2-10	10																										
4	2BB-4-3-1	1																										
4	2BB-4-3-4	4																										
4	2BB-4-3-10	10																										
4	2BB-4-3A-1	1																										
4	2BB-4-3A-4	4																										
4	2BB-4-3A-10	10																										
4	2BB-4-3A-20	20																										
4	2BB-4-3A-30	30																										
4	2BB-4-3A-40	40																										
4	2BB-4-3A-50	50																										
4	2BB-4-4-1	1																										
4	2BB-4-4-4	4																										
4	2BB-4-4-10	10																										
4	2BB-4-5-1	1																										
4	2BB-4-5-4	4																										
4	2BB-4-5-10	10																										
4	2BB-4-6-1	1																										
4	2BB-4-6-4	4																										
4	2BB-4-6-10	10																										
5	2BB-5-13-1	1																										
5	2BB-5-13-4	4																										
5	2BB-5-13-10	10																										
5	2BB-5-13-15	15																										
5	2BB-5-13-20	20																										
5	2BB-5-13-25	25																										

Notes follow at end of table.

g:\mcd-d\Table5

TABLE 5

RESULTS OF SEMI-VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8270)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Naphthalene	2-Nitroaniline	3-Nitroaniline	4-Nitroaniline	Nitrobenzene	2-Nitrophenol	4-Nitrophenol	N-Nitrosodiphenylamine	N-Nitroso-di-n-propylamine	N-Nitrosodimethylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	1,2,4-Trichlorobenzene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol
Detection Limit (ug/kg)			100	250	250	250	100	100	100	100	100	100	250	100	100	100	100	100	100
4	2BB-4-1-1	1																	
4	2BB-4-1-4	4																	
4	2BB-4-1-10	10																	
4	2BB-4-2-1	1																	
4	2BB-4-2-4	4																	
4	2BB-4-2-10	10																	
4	2BB-4-3-1	1													150				
4	2BB-4-3-4	4																	
4	2BB-4-3-10	10																	
4	2BB-4-3A-1	1																	
4	2BB-4-3A-4	4																	
4	2BB-4-3A-10	10																	
4	2BB-4-3A-20	20																	
4	2BB-4-3A-30	30																	
4	2BB-4-3A-40	40																	
4	2BB-4-3A-50	50																	
4	2BB-4-4-1	1																	
4	2BB-4-4-4	4																	
4	2BB-4-4-10	10																	
4	2BB-4-5-1	1																	
4	2BB-4-5-4	4																	
4	2BB-4-5-10	10																	
4	2BB-4-6-1	1																	
4	2BB-4-6-4	4																	
4	2BB-4-6-10	10																	
5	2BB-5-13-1	1																	
5	2BB-5-13-4	4																	
5	2BB-5-13-10	10																	
5	2BB-5-13-15	15																	
5	2BB-5-13-20	20																	
5	2BB-5-13-25	25																	

Notes follow at end of table.

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TABLE 5

RESULTS OF SEMI-VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8270)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Acenaphthene	Acenaphthylene	Aniline	Anthracene	Benzidine	Benzoic acid	Benz(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Benzo(a)pyrene	Benzyl alcohol	Bis(2-chloroethoxy)methane	Bis(2-chloroethyl)ether	Bis(2-chloroisopropyl)ether	Bis(2-ethylhexyl)phthalate	4-Bromophenyl phenyl ether	Butyl benzyl phthalate	4-Chloroaniline	2-Chloronaphthalene	4-Chloro-3-methylphenol	2-Chlorophenol	4-Chlorophenyl phenyl ether	Chrysene	Dibenz(a,h)anthracene
Detection Limit (ug/kg)			100	100	100	100	500	250	100	250	250	250	250	100	100	100	100	100	100	100	100	100	100	100	100	100	100
5	2BB-5-14-1	1																									
5	2BB-5-14-4	4																									
5	2BB-5-14-10	10																									
5	2BB-5-14-15	15																									
5	2BB-5-14-20	20																									
5	2BB-5-14-25	25																150									
5	2BB-5-21-1	1							230	410			360													370	
5	2BB-5-21-4	4																									
5	2BB-5-21-10	10																									
5	2BB-5-21-15	15																									
5	2BB-5-21-20	20																									
5	2BB-5-21-25	25																									
5	2BB-5-22-1	1																								160	
5	2BB-5-22-4	4																									
5	2BB-5-22-10	10																									
5	2BB-5-22-15	15																									
5	2BB-5-22-20	20																									
5	2BB-5-22-25	25																									

Notes follow at end of table.

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TABLE 5

RESULTS OF SEMI-VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8270)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Dibenzofuran	Di-n-butyl phthalate	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichlorobenzene	3,3'-Dichlorobenzidine	2,4-Dichlorophenol	Diethyl phthalate	2,4-Dimethylphenol	Dimethyl phthalate	4,6-Dinitro-2-methylphenol	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Di-n-octyl phthalate	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno(1,2,3-cd)pyrene	Isophorone	2-Methylnaphthalene	2-Methylphenol	4-Methylphenol
Detection Limit (ug/kg)			100	250	100	100	100	100	100	100	100	100	100	100	250	250	250	100	100	100	100	100	100	250	100	100	100	100
5	2BB-5-14-1	1																										
5	2BB-5-14-4	4																										
5	2BB-5-14-10	10																										
5	2BB-5-14-15	15																										
5	2BB-5-14-20	20																										
5	2BB-5-14-25	25																										
5	2BB-5-21-1	1																540						270				
5	2BB-5-21-4	4																										
5	2BB-5-21-10	10																										
5	2BB-5-21-15	15																										
5	2BB-5-21-20	20																										
5	2BB-5-21-25	25																										
5	2BB-5-22-1	1																200										
5	2BB-5-22-4	4																										
5	2BB-5-22-10	10																										
5	2BB-5-22-15	15																										
5	2BB-5-22-20	20																										
5	2BB-5-22-25	25																										

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Notes follow at end of table.

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TABLE 5

RESULTS OF SEMI-VOLATILE ORGANIC COMPOUNDS AND DETECTION LIMITS
(EPA Method 8270)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	Naphthalene	2-Nitroaniline	3-Nitroaniline	4-Nitroaniline	Nitrobenzene	2-Nitrophenol	4-Nitrophenol	N-Nitrosodiphenylamine	N-Nitroso-di-n-propylamine	N-Nitrosodimethylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	1,2,4-Trichlorobenzene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol
Detection Limit (ug/kg)			100	250	250	250	100	100	100	100	100	100	250	100	100	100	100	100	100
5	2BB-5-14-1	1																	
5	2BB-5-14-4	4																	
5	2BB-5-14-10	10																	
5	2BB-5-14-15	15																	
5	2BB-5-14-20	20																	
5	2BB-5-14-25	25																	
5	2BB-5-21-1	1												190		420			
5	2BB-5-21-4	4																	
5	2BB-5-21-10	10																	
5	2BB-5-21-15	15																	
5	2BB-5-21-20	20																	
5	2BB-5-21-25	25																	
5	2BB-5-22-1	1														170			
5	2BB-5-22-4	4																	
5	2BB-5-22-10	10																	
5	2BB-5-22-15	15																	
5	2BB-5-22-20	20																	
5	2BB-5-22-25	25																	

ed cell indicates constituent concentration did not exceed detection limit.
‹ cell indicates sample was not analyzed for that constituent.

Notes follow at end of table.

g:\mcd-d\Table5

TABLE 6

RESULTS OF CCR - METALS AND DETECTION LIMITS

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample I.D.	Sample Depth (ft. bgs)	Antimony EPA 6010 (mg/kg)	Arsenic EPA 6010 (mg/kg)	Barium EPA 6010 (mg/kg)	Beryllium EPA 6010 (mg/kg)	Cadmium EPA 6010 (mg/kg)	Chromium VI EPA 7196 (mg/kg)	Chromium Tot. EPA 6010 (mg/kg)	Cobalt EPA 6010 (mg/kg)	Copper EPA 6010 (mg/kg)	Lead EPA 6010 (mg/kg)	Mercury EPA 7471 (mg/kg)	Molybdenum EPA 6010 (mg/kg)	Nickel EPA 6010 (mg/kg)	Selenium EPA 6010 (mg/kg)	Silver EPA 6010 (mg/kg)	Thallium EPA 6010 (mg/kg)	Vanadium EPA 6010 (mg/kg)	Zinc EPA 6010 (mg/kg)
	STLC Limits (mg/l)		15	5.0	100	0.75	1.0	5.0	560	80	25	5.0	0.2	350	20	1.0	5.0	7.0	24	250
	TTLC Limits (mg/kg)		500	500	10000	75	100	500	2500	8000	2500	1000	20	3500	2000	100	500	700	2400	5000
	Detection Limit (mg/kg)		5.0	1.0	0.1	0.1	0.1	0.5	0.05	0.5	0.1	1.0	0.01	0.5	0.5	1.0	0.1	5.0	0.5	0.1
4	2BB-4-1-1	1			99				27	7.2	15				11				27	46
4	2BB-4-1-4	4			110				25	7.3	29				11				29	46
4	2BB-4-1-10	10			80				20	5.4	12				9.2				22	35
4	2BB-4-2-1	1			100				31	7.8	16				12				32	47
4	2BB-4-2-4	4			100				31	8.0	16				14				32	48
4	2BB-4-2-10	10			84				22	7.6	15				12				27	43
4	2BB-4-3-1	1			47				24	4.8	6.4				10				22	39
4	2BB-4-3-4	4			110				34	7.9	9.0				14				33	38
4	2BB-4-3-10	10			99				30	8.0	21				15				33	50
4	2BB-4-3A-1	1			71				27	5.4	9.8				8.8				23	33
4	2BB-4-3A-4	4			88				26	4.9	8.0				8.9				26	32
4	2BB-4-3A-10	10			94				21	6.3	14				13				23	36
4	2BB-4-3A-20	20			160				26	7.8	18				12				31	45
4	2BB-4-3A-30	30			120				25	6.7	15				12				30	39
4	2BB-4-3A-40	40			120				30	7.9	19				14				39	49
4	2BB-4-3A-50	50			26				12	5.6	3.8				5.6				21	15
4	2BB-4-4-1	1			110				27	7.3	15				12				28	41
4	2BB-4-4-4	4			86				25	6.2	12				11				27	39
4	2BB-4-4-10	10			79				19	5.6	8.7				7.9				20	37
4	2BB-4-5-1	1			110				27	7.1	14				12				27	46
4	2BB-4-5-4	4			81				27	6.7	14				11				28	39
4	2BB-4-5-10	10			120				35	6.6	14				13				27	41
4	2BB-4-6-1	1			82				24	5.2	8.3				7.8				23	34
4	2BB-4-6-4	4			80				21	5.4	22				8.1				24	44
4	2BB-4-6-10	10			88				30	7.0	11				12				30	41
5	2BB-5-2-1	1			150				30	8.7	15				15				31	63
5	2BB-5-2-4	4			170				28	7.7	10				14				28	43
5	2BB-5-2-10	10			170				41	9.2	24				20				42	70
5	2BB-5-3-4	4			160				17	8.3	12				12				27	36
5	2BB-5-3-10	10			110				20	6.7	13				11				23	42
5	2BB-5-3-20	20			91				22	4.6	9.4				9.4				24	39
5	2BB-5-3-30	30			31				10	3.2	1.1				5.5				14	20
5	2BB-5-3-40	40			39				30	11	25				21				35	47
5	2BB-5-3-50	50			32				16	4.5	8.4				11				17	26
5	2BB-5-4-4	4			130				34	7.5	19				15				34	55
5	2BB-5-4-10	10			130				31	9.1	17				13				38	53
5	2BB-5-4-20	20			74				14	3.7	9.0				6.3				18	23
5	2BB-5-4-35	35			19				12	2.6	2.5				5.3				13	17
5	2BB-5-4-40	40			27				15	5.6	8.9				8.7				19	22
5	2BB-5-4-50	50			44				29	8.6	22				19				34	47
5	2BB-5-6-1	1			89				20	8.7	10				10				24	31

Notes follow at end of table.

g:\mcd-d\Table6

TABLE 6

RESULTS OF CCR - METALS AND DETECTION LIMITS

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample I.D.	Sample Depth (ft. bgs)	Antimony EPA 6010 (mg/kg)	Arsenic EPA 6010 (mg/kg)	Barium EPA 6010 (mg/kg)	Beryllium EPA 6010 (mg/kg)	Cadmium EPA 6010 (mg/kg)	Chromium VI EPA 7196 (mg/kg)	Chromium Tot. EPA 6010 (mg/kg)	Cobalt EPA 6010 (mg/kg)	Copper EPA 6010 (mg/kg)	Lead EPA 6010 (mg/kg)	Mercury EPA 7471 (mg/kg)	Molybdenum EPA 6010 (mg/kg)	Nickel EPA 6010 (mg/kg)	Selenium EPA 6010 (mg/kg)	Silver EPA 6010 (mg/kg)	Thallium EPA 6010 (mg/kg)	Vanadium EPA 6010 (mg/kg)	Zinc EPA 6010 (mg/kg)
	STLC Limits (mg/l)		15	5.0	100	0.75	1.0	5.0	560	80	25	5.0	0.2	350	20	1.0	5.0	7.0	24	250
	TTLC Limits (mg/kg)		500	500	10000	75	100	500	2500	8000	2500	1000	20	3500	2000	100	500	700	2400	5000
	Detection Limit (mg/kg)		5.0	1.0	0.1	0.1	0.1	0.5	0.05	0.5	0.1	1.0	0.01	0.5	0.5	1.0	0.1	5.0	0.5	0.1
5	2BB-5-6-4	4			120				21	7.6	9.4				13				27	35
5	2BB-5-6-10	10			140				36	8.9	16				16				39	66
5	2BB-5-7-1	1			110				33	7.5	81	59			17				39	64
5	2BB-5-7-4	4			120				26	8.7	11				13				28	40
5	2BB-5-7-10	10			100				21	5.6	10				11				23	39
5	2BB-5-8-1	1			92				28	8.4	11				12				28	42
5	2BB-5-8-4	4			100				31	9.2	12				16				34	49
5	2BB-5-8-10	10			110				27	6.4	12				12				27	48
5	2BB-5-9-1	1			130				29	7.6	11				14				29	49
5	2BB-5-9-4	4			110				33	7.3	13				16				36	57
5	2BB-5-9-10	10			130				34	8.6	15				15				36	63
5	2BB-5-10-1	1			110				25	7.1	12				11				25	39
5	2BB-5-10-1	1			110				21	7.6	12				10				29	39
5	2BB-5-10-4	4			74				18	7.2	8.1				10				20	27
5	2BB-5-10-4	4			150				20	8.8	11				13				23	35
5	2BB-5-10-10	10			120				20	6.8	13				14				25	36
5	2BB-5-10-10	10			140				29	9.2	21				16				34	56
5	2BB-5-11-1	1			120				24	8.1	15				13				32	42
5	2BB-5-11-4	4			120				29	8.5	13				13				28	41
5	2BB-5-11-10	10			160				36	8.9	21				17				42	66
5	2BB-5-11-15	15			130				28	7.4	13				11				36	57
5	2BB-5-11-20	20			140				32	8.7	19				13				40	60
5	2BB-5-11-25	25			180				46	11	37				21				52	86
5	2BB-5-16-1	1			77				14	5.5	9.6				7.9				21	27
5	2BB-5-16-4	4			96				24	6.2	15				11				26	38
5	2BB-5-16-7	7			98				23	6.3	14				14				25	39
5	2BB-5-16-10	10			78				17	4.7	11				8.9				18	30
5	2BB-5-16-15	15			96				23	6.1	12				12				26	40
5	2BB-5-16-20	20			110				25	8.0	18				14				22	48
5	2BB-5-16-25	25			50				12	3.1	6.4				5.3				17	20
5	2BB-5-19-4	4			83				23	7.1	9.6				10				22	33
5	2BB-5-19-10	10			110				34	9.1	19				18				38	55
5	2BB-5-19-15	15			130				30	8.3	18				13				34	56
5	2BB-5-19-20	20			130				30	8.0	19				13				38	56
5	2BB-5-19-25	25			200				50	12	39				26				66	88
5	2BB-5-20-1	1		170	61		6.7		18	8.0	15	2.8			21				29	36
5	2BB-5-20-4	4			140				29	8.0	14				13				38	47
5	2BB-5-20-10	10			150				26	8.7	16				14				30	45
5	2BB-5-20-20	20			130				29	8.3	16				14				36	56
5	2BB-5-20-30	30			56				15	3.9	7.8				7.4				17	27
5	2BB-5-20-40	40			70				6.0	3.5	5.0				4.9				12	10

Notes follow at end of table.

g:\mcd-d\Table6

TABLE 6

RESULTS OF CCR - METALS AND DETECTION LIMITS

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample I.D.	Sample Depth (ft. bgs)	Antimony EPA 6010 (mg/kg)	Arsenic EPA 6010 (mg/kg)	Barium EPA 6010 (mg/kg)	Beryllium EPA 6010 (mg/kg)	Cadmium EPA 6010 (mg/kg)	Chromium VI EPA 7196 (mg/kg)	Chromium Tot. EPA 6010 (mg/kg)	Cobalt EPA 6010 (mg/kg)	Copper EPA 6010 (mg/kg)	Lead EPA 6010 (mg/kg)	Mercury EPA 7471 (mg/kg)	Molybdenum EPA 6010 (mg/kg)	Nickel EPA 6010 (mg/kg)	Selenium EPA 6010 (mg/kg)	Silver EPA 6010 (mg/kg)	Thallium EPA 6010 (mg/kg)	Vanadium EPA 6010 (mg/kg)	Zinc EPA 6010 (mg/kg)
	STLC Limits (mg/l)		15	5.0	100	0.75	1.0	5.0	560	80	25	5.0	0.2	350	20	1.0	5.0	7.0	24	250
	TTLC Limits (mg/kg)		500	500	10000	75	100	500	2500	8000	2500	1000	20	3500	2000	100	500	700	2400	5000
	Detection Limit (mg/kg)		5.0	1.0	0.1	0.1	0.1	0.5	0.05	0.5	0.1	1.0	0.01	0.5	0.5	1.0	0.1	5.0	0.5	0.1
5	2BB-5-20-50	50			110				59	6.5	29				15				58	56
5	2BB-5-21-1	1			77				23	5.8	10				10				24	35
5	2BB-5-21-4	4			73				27	7.5	9.6				8.6				28	34
5	2BB-5-21-10	10			74				22	7.1	13				12				26	41
5	2BB-5-21-15	15			86				26	6.6	15				12				31	45
5	2BB-5-21-20	20			130				31	7.7	15				13				35	58
5	2BB-5-21-25	25			100				26	8.0	15				13				32	48
5	2BB-5-22-1	1			97				25	7.2	10	44			11				31	43
5	2BB-5-22-4	4			91				27	6.8	11				9.7				32	37
5	2BB-5-22-10	10			80				24	7.5	13				13				24	43
5	2BB-5-22-15	15			100				27	7.1	15				12				30	45
5	2BB-5-22-20	20			120				27	8.0	17				13				35	55
5	2BB-5-22-25	25			89				27	6.3	14				12				29	44
5	2BB-5-23-1	1			80				19	7.3	15				11				24	36
5	2BB-5-23-4	4			82				23	6.9	7.8				12				27	31
5	2BB-5-23-10	10			100				27	7.5	18				14				28	47
5	2BB-5-23-15	15			94				22	6.0	11				9.5				24	39
5	2BB-5-23-20	20			110				23	6.1	15				9.9				27	43
5	2BB-5-23-25	25			160				33	8.5	24				17				30	63
5	2BB-5-26-1	1			110				32	9.0	18				15				38	52
5	2BB-5-26-4	4			110				35	9.1	20				18				40	58
5	2BB-5-26-10	10			34				7	2.1	6.1				5.8				8.6	12
5	2BB-5-27-1	1			120				31	8.1	10				15				33	48
5	2BB-5-27-4	4			100				21	5.8	7.9				8.9				22	37
5	2BB-5-27-10	10			130				32	8.0	13				14				37	53
5	2BB-5-28-1	1			120				33	8.0	18				13				40	60
5	2BB-5-28-4	4			130				33	7.6	17				13				39	59
5	2BB-5-28-10	10			120				30	8.2	16				14				33	52
5	2BB-5-29-1	1			120				29	7.9	17				13				35	56
5	2BB-5-29-4	4			110				28	7.2	18				15				33	47
5	2BB-5-29-10	10			150				35	8.6	16				16				38	57
5	2BB-5-30-1	1			100				28	6.8	12				14				25	47
5	2BB-5-30-4	4			77				17	5.5	6.8				8.7				16	31
5	2BB-5-30-10	10			130				34	8.8	15				16				34	66
5	2BB-5-31-4	4			97				19	5.4	9.2				8.9				25	3.9
5	2BB-5-31-10	10			67				15	4.5	4.4				8.3				23	25
5	2BB-5-32-1	1			46				5	2.2	0.9				3.3				9.3	10
5	2BB-5-32-4	4			150				38	9.1	22				17				43	65
5	2BB-5-32-10	10			110				30	8.4	12				15				34	47
5	2BB-5-33-1	1			120				22	7.3	9.5				13				25	37
5	2BB-5-33-4	4			130				28	7.7	16				14				29	46

Notes follow at end of table.

g:\mcd-d\Table6

TABLE 6

RESULTS OF CCR - METALS AND DETECTION LIMITS

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample I.D.	Sample Depth (ft. bgs)	Antimony EPA 6010 (mg/kg)	Arsenic EPA 6010 (mg/kg)	Barium EPA 6010 (mg/kg)	Beryllium EPA 6010 (mg/kg)	Cadmium EPA 6010 (mg/kg)	Chromium VI EPA 7196 (mg/kg)	Chromium Tot. EPA 6010 (mg/kg)	Cobalt EPA 6010 (mg/kg)	Copper EPA 6010 (mg/kg)	Lead EPA 6010 (mg/kg)	Mercury EPA 7471 (mg/kg)	Molybdenum EPA 6010 (mg/kg)	Nickel EPA 6010 (mg/kg)	Selenium EPA 6010 (mg/kg)	Silver EPA 6010 (mg/kg)	Thallium EPA 6010 (mg/kg)	Vanadium EPA 6010 (mg/kg)	Zinc EPA 6010 (mg/kg)
	STLC Limits (mg/l)		15	5.0	100	0.75	1.0	5.0	560	80	25	5.0	0.2	350	20	1.0	5.0	7.0	24	250
	TTLC Limits (mg/kg)		500	500	10000	75	100	500	2500	8000	2500	1000	20	3500	2000	100	500	700	2400	5000
	Detection Limit (mg/kg)		5.0	1.0	0.1	0.1	0.1	0.5	0.05	0.5	0.1	1.0	0.01	0.5	0.5	1.0	0.1	5.0	0.5	0.1
5	2BB-5-33-10	10			100				22	6.6	12				10				26	42
5	2BB-5-34-1	1			64				17	5.7	2.9				10				19	32
5	2BB-5-34-4	4			73				15	4.6	5.2				8.8				20	23
5	2BB-5-34-10	10			120				30	8.4	16				13				34	54
5	2BB-5-35-1	1			74				16	6.5	13				11				18	36
5	2BB-5-35-4	4			96				26	7.2	7.8				13				27	41
5	2BB-5-35-10	10			160				35	10	20				16				36	59
5	2BB-5-36-1	1			81				22	6.3	8.5				12				24	33
5	2BB-5-36-4	4			100				25	7.3	13				14				27	38
5	2BB-5-36-10	10			130				25	7.9	17				14				31	47
5	2BB-5-37-1	1			90				14	5.5	5.9				8.5				16	29
5	2BB-5-37-4	4			77				16	4.3	7.3				7.1				15	29
5	2BB-5-37-10	10			68				11	4.3	8.1				6.4				14	28
5	2BB-5-38-1	1			65				18	10	6.4								18	30
5	2BB-5-38-4	4			88				17	6.1	7.3				10				15	34
5	2BB-5-38-10	10			80				18	5.7	10				9.6				22	35
5	2BB-5-39-1	1			100				27	7.7	11				15				28	39
5	2BB-5-39-4	4			120				34	8.0	14				14				33	46
5	2BB-5-39-10	10			110				29	7.5	14				14				32	50
5	2BB-5-40-1	1			100				25	8.1	9.3				15				28	40
5	2BB-5-40-4	4			76				15	5.3	5.8				9.4				17	24
5	2BB-5-40-10	10			150				31	8.6	15				13				30	53
5	2BB-5-41-1	1			64				21	5.7	9.1				12				23	32
5	2BB-5-41-4	4			100				30	7.3	13				15				32	44
5	2BB-5-41-10	10			100				27	7.3	14				13				29	48
5	2BB-5-42-1	1			94				30	8.8	16				16				27	49
5	2BB-5-42-4	4			82				17	4.5	5.1				9				22	24
5	2BB-5-42-10	10			130				25	7.6	14				12				28	51
5	2BB-5-43-1	1			60				16	4.5	4.6				8.3				19	26
5	2BB-5-43-4	4			95				18	6.3	9.4				11				16	31
5	2BB-5-43-10	10			140				30	8.1	15				14				35	57
5	2BB-5-44-1	1			86				20	7.4	8.6				12				28	36
5	2BB-5-44-4	4			150				29	8.5	13				14				35	37
5	2BB-5-44-10	10			94				34	8.7	20				16				35	49
5	2BB-5-45-1	1			120				35	7.9	8.0				13				37	43
5	2BB-5-45-4	4			120				29	6.8	8.1				13				36	51
5	2BB-5-45-10	10			110				24	7.2	11				12				28	44
5	2BB-5-46-1	1			99				26	6.9	8.4				10				28	45
5	2BB-5-47-1	1			110				20	7.2	7.6				7.2				23	36
5	2BB-5-47-4	4			100				29	7.4	6.8				8.8				31	41
5	2BB-5-47-10	10			120				24	8.6	13				16				32	49

Notes follow at end of table.

TABLE 6

RESULTS OF CCR - METALS AND DETECTION LIMITS

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample I.D.	Sample Depth (ft. bgs)	Antimony EPA 6010 (mg/kg)	Arsenic EPA 6010 (mg/kg)	Barium EPA 6010 (mg/kg)	Beryllium EPA 6010 (mg/kg)	Cadmium EPA 6010 (mg/kg)	Chromium VI EPA 7196 (mg/kg)	Chromium Tot. EPA 6010 (mg/kg)	Cobalt EPA 6010 (mg/kg)	Copper EPA 6010 (mg/kg)	Lead EPA 6010 (mg/kg)	Mercury EPA 7471 (mg/kg)	Molybdenum EPA 6010 (mg/kg)	Nickel EPA 6010 (mg/kg)	Selenium EPA 6010 (mg/kg)	Silver EPA 6010 (mg/kg)	Thallium EPA 6010 (mg/kg)	Vanadium EPA 6010 (mg/kg)	Zinc EPA 6010 (mg/kg)
	STLC Limits (mg/l)		15	5.0	100	0.75	1.0	5.0	560	80	25	5.0	0.2	350	20	1.0	5.0	7.0	24	250
	TTLC Limits (mg/kg)		500	500	10000	75	100	500	2500	8000	2500	1000	20	3500	2000	100	500	700	2400	5000
	Detection Limit (mg/kg)		5.0	1.0	0.1	0.1	0.1	0.5	0.05	0.5	0.1	1.0	0.01	0.5	0.5	1.0	0.1	5.0	0.5	0.1
5	2BB-5-48-1	1			130				41	9.2	8.5				16				39	55
5	2BB-5-48-4	4			91				27	6.3	8.5				9.8				29	41
5	2BB-5-48-10	10			95				28	7.1	9.0				12				29	51

Shaded cell indicates constituent concentration did not exceed detection limit.

Notes follow at end of table.

g:\mcd-d\Table6

TABLE 7

RESULTS OF POLYCHLORINATED BIPHENYLS AND DETECTION LIMITS
(EPA Method 8080)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
	Detection Limit (ug/kg)		20	20	20	20	20	20	20
5	2BB-5-3-4	4							
5	2BB-5-3-10	10							
5	2BB-5-3-20	20							
5	2BB-5-3-30	30							
5	2BB-5-3-40	40							
5	2BB-5-3-50	50							
5	2BB-5-4-4	4							
5	2BB-5-4-10	10							
5	2BB-5-4-20	20							
5	2BB-5-4-35	35							
5	2BB-5-4-40	40							
5	2BB-5-4-50	50							
5	2BB-5-12-1	1							
5	2BB-5-12-4	4							
5	2BB-5-12-10	10							
5	2BB-5-12-15	15							
5	2BB-5-12-20	20							
5	2BB-5-12-25	25							
5	2BB-5-13-1	1							
5	2BB-5-13-4	4							
5	2BB-5-13-10	10							
5	2BB-5-13-15	15							
5	2BB-5-13-20	20							
5	2BB-5-13-25	25							
5	2BB-5-14-1	1							100
5	2BB-5-14-4	4							160
5	2BB-5-14-10	10							
5	2BB-5-14-15	15							
5	2BB-5-14-20	20							
5	2BB-5-14-25	25							

Shaded cell indicates constituent concentration did not exceed detection limit.

TABLE 8

RESULTS OF pH Analysis
(EPA Method 9045)

McDonnell Douglas Realty Corporation
C-6 Facility, Torrance, California
K/J 974002.00

Area	Sample ID	Depth (ft bgs)	pH
5	2BB-5-10-1	1	6.4
5	2BB-5-10-4	4	7.4
5	2BB-5-10-10	10	8.1
5	2BB-5-21-1	1	8.1
5	2BB-5-21-4	4	8.0
5	2BB-5-21-10	10	7.8
5	2BB-5-21-15	15	7.8
5	2BB-5-21-20	20	7.6
5	2BB-5-21-25	25	7.8
5	2BB-5-22-1	1	7.4
5	2BB-5-22-4	4	7.5
5	2BB-5-22-10	10	7.7
5	2BB-5-22-15	15	7.6
5	2BB-5-22-20	20	7.7
5	2BB-5-22-25	25	7.8
5	2BB-5-23-1	1	7.8
5	2BB-5-23-4	4	7.3
5	2BB-5-23-10	10	7.5
5	2BB-5-23-15	15	7.7
5	2BB-5-23-20	20	7.8
5	2BB-5-23-25	25	7.9

TABLE 9
SUMMARY OF RESULTS OF QA/QC ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS (EPA Method 8260 and/or 8010/8020)

McDonnell Douglas Realty Company
C-6 Facility, Los Angeles, California

Sample Number	Date Sampled	Onsite Laboratory (µg/kg)	Stationary Laboratory (µg/kg)
Detection Limit		5.0	5.0
2BB-5-29-4	04/08/1997		
2BB-5-41-1	4\9\97		
2BB-4-3-1	4\16\97		
2BB-5-20-20	4\17\97		
2BB-5-7-4	4\18\97		
2BB-5-8-10	4\21\97		
2BB-5-46-1	4\21\97		
2BB-5-44-1	4\21\97		
2BB-5-18-20	4\21\97		
2BB-5-11-4	4\22\97		
2BB-5-3-4	4\22\97		
2BB-5-14-25	4\22\97		
2BB-5-16-1	4\23\97		
2BB-4-3A-4	4\24\97		

Shaded cell indicates constituent result was below detection limit.

TABLE 10
SUMMARY OF RESULTS OF QA/QC ANALYSIS FOR TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA Method 418.1)

McDonnell Douglas Realty Company
C-6 Facility, Los Angeles, California

Sample No.	Date Sampled	Laboratory Results (mg/kg)	
		Onsite	Stationary
Detection Limit		**20/10**	**8**
2BB-5-32-10	04/08/1997		
2BB-5-26-4	04/08/1997		
2BB-5-33-1	04/09/1997		
2BB-5-36-1	04/09/1997		
2BB-5-42-10	04/09/1997		
2BB-5-23-15	04/11/1997		22
2BB-4-6-10	04/16/1997		8.5
2BB-5-20-40	04/17/1997		
2BB-5-2-4	04/18/1997		
2BB-5-19-20	04/22/1997		42
2BB-5-11-10	04/22/1997		21
2BB-5-3-4	04/22/1997		32
2BB-5-14-25	04/22/1997		23
2BB-5-4-50	04/22/1997		
2BB-5-12-1	04/23/1997		
2BB-5-16-15	04/23/1997		28
2BB-4-3A-20	04/24/1997		

Shaded cell indicates constituent result was below detection limit.

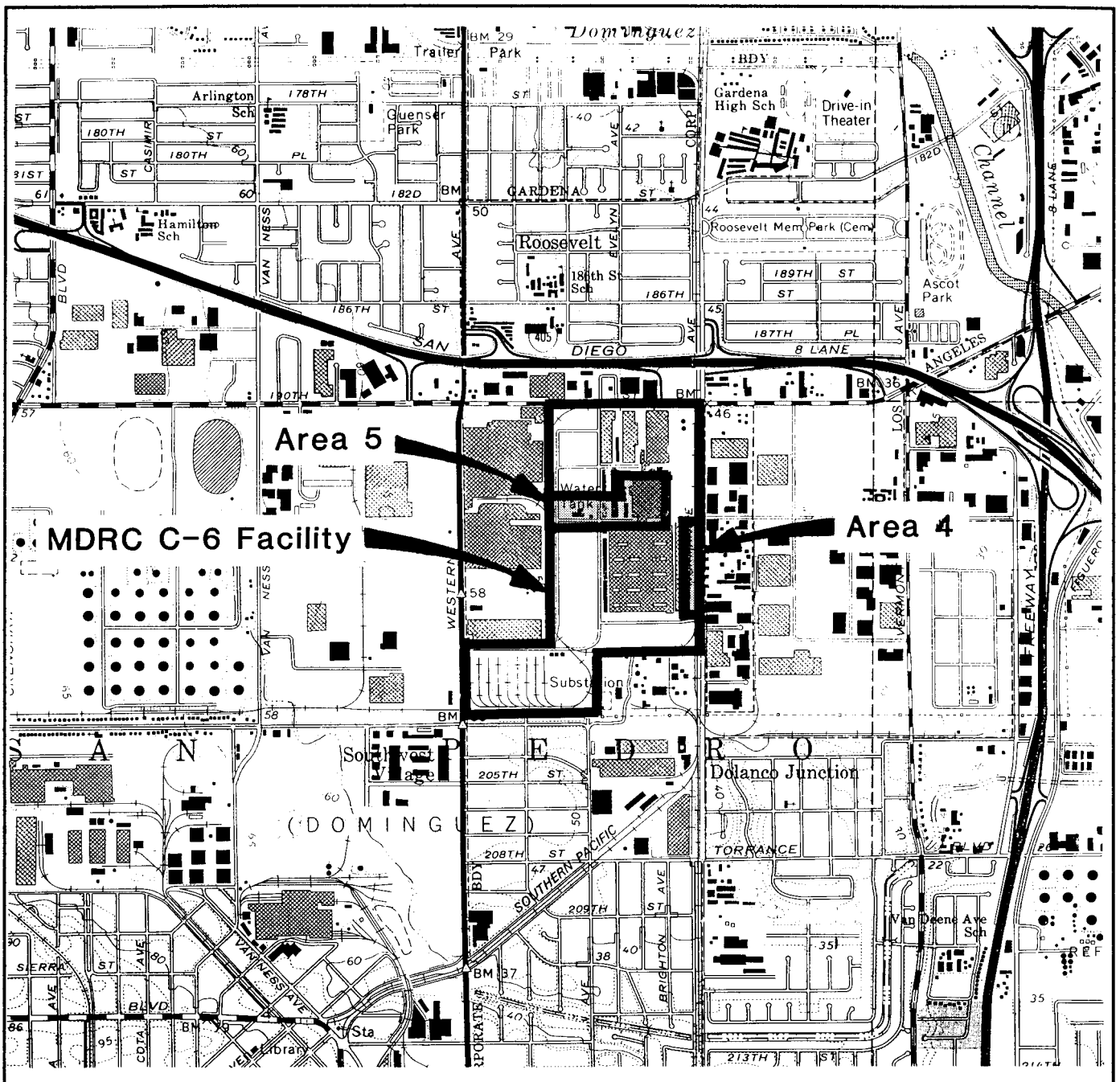
TABLE 11
COMPARISON OF >200 µg/kg ANALYSIS OF
TOTAL VOLATILE ORGANIC COMPOUNDS

McDonnell Douglas Realty Company
C-6 Facility, Los Angeles, California

			Onsite Results (µg/kg)					OCA Results (µg/kg)							
Area	Sample ID	Depth (ft bgs)	Ethylbenzene	Toluene	Total Xylenes	1,1-Dichloroethene (1,1-DCE)	Trichloroethene (TCE)	Ethylbenzene	Toluene	Total Xylenes	1,2,4-Trimethylbenzene	1,2,4-Trichlorobenzene	1,2,3-Trichlorobenzene	1,1-Dichloroethene (1,1-DCE)	Trichloroethene (TCE)
5	2BB-5-13-1	1	11,000	1,200	119,000					3.3	2.9	4.0	3.9		
5	2BB-5-33-4	4				69	150								
5	2BB-5-33-10	10				63	150								8.6

Shaded cell indicates constituent result was below the detection limit.
Table lists only constituents that were detected in at least one sample.

Figures



Source: Basemap modified from
U.S.G.S. Torrance, California
7.5 Minute Quadrangle
Photorevised 1981

0 2000 4000

Approximate Scale in Feet

N

Kennedy/Jenks Consultants

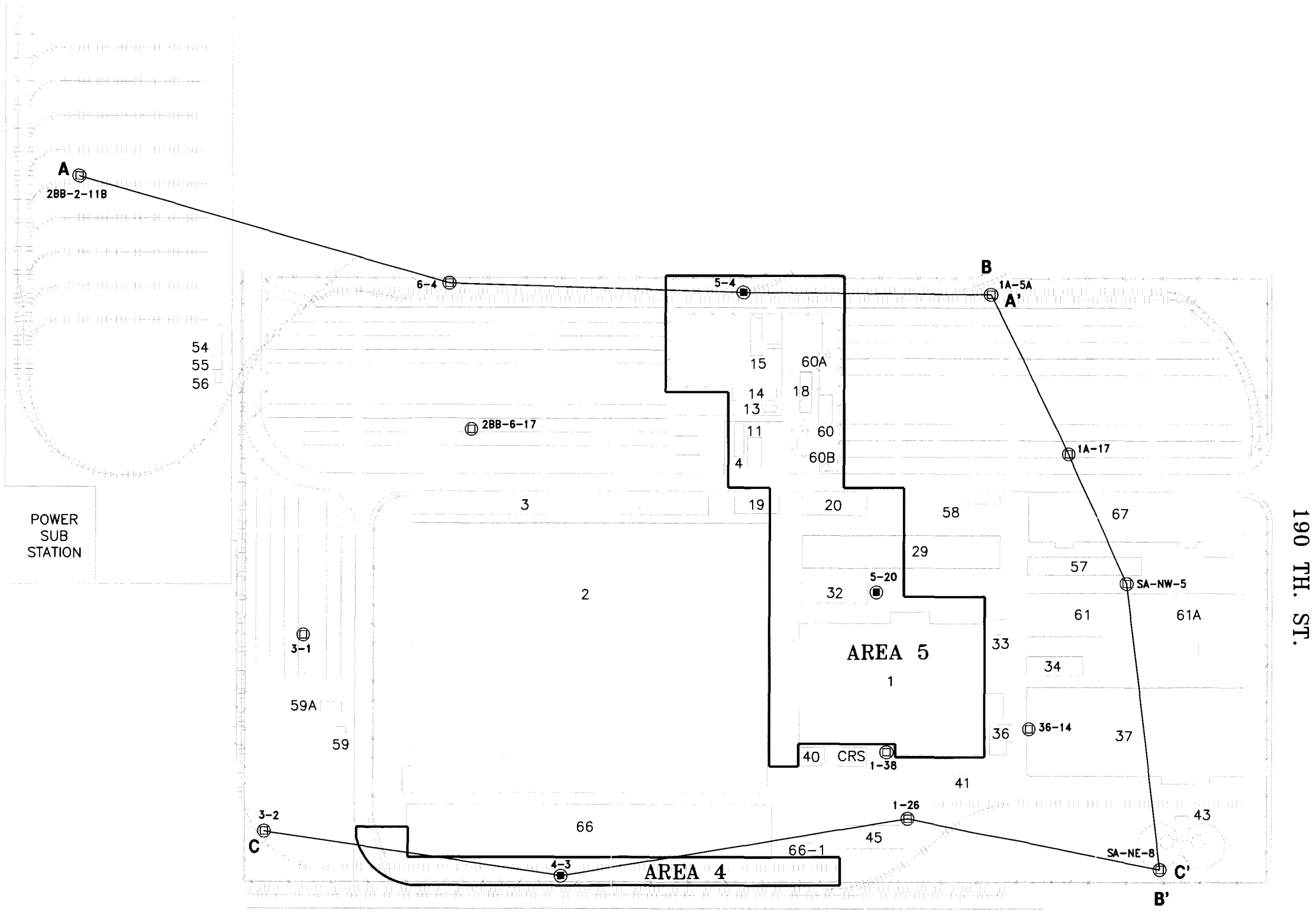
MDRC C-6 Facility
Los Angeles, California

Site Location Map

September 1997
K/J 974002.00

Figure 1

WESTERN AVE.



0 400 800

Approximate Scale: 1"=400'

N

LEGEND

3-1 ◎ CONTINUOUS CORE BORING

5-20 ◉ CONTINUOUS CORE BORING IN AREAS 4 AND 5

GENERALIZED CROSS-SECTION LOCATION

A - A'	Figure 3
B - B'	Figure 4
C - C'	Figure 5

Kennedy/Jenks Consultants

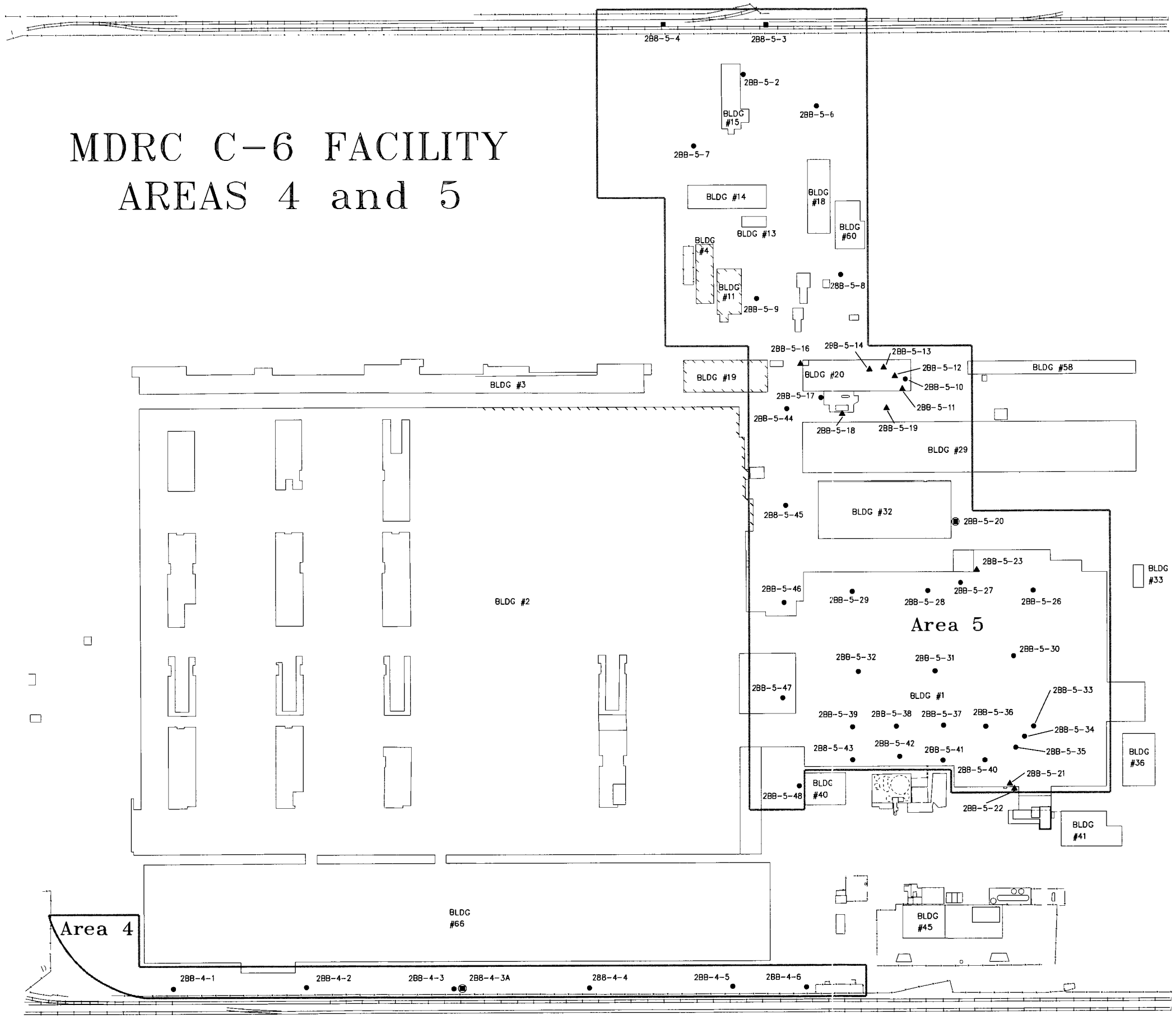
MDRC C-6 Facility
Los Angeles, California

Continuous Core Boring and Cross-Section Locations

September 1997
K/J 974002.00

Figure 1A

MDRC C-6 FACILITY
AREAS 4 and 5



Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

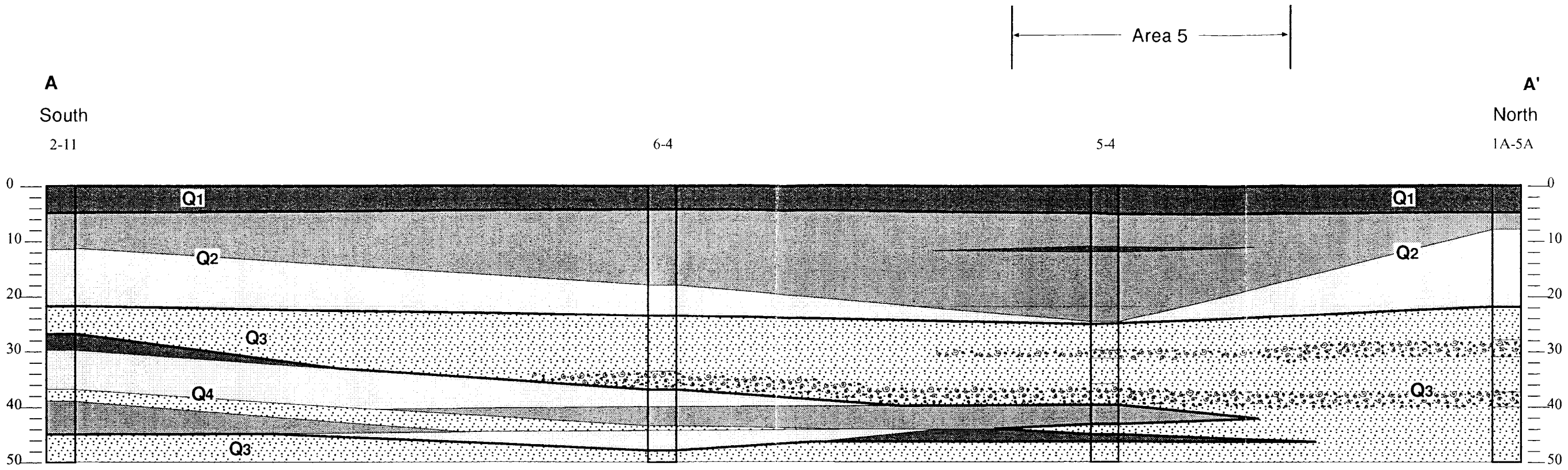
MDRC C-6 Facility
Los Angeles, California

Areas 4 and 5
Boring Locations

September 1997
K/J 974002.00

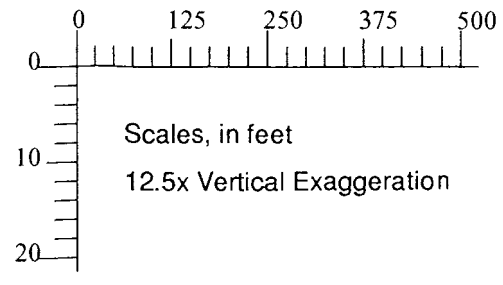
Figure 2

BOE-C6-0046506



EXPLANATION

CL/CH	Clay, Silty Clay, or Sandy Clay
ML	Silt, Clayey Silt, or Sandy Silt
SM	Silty Sand
SP/SW	Sand
SP	Shell Beds in Sand



Notes:

Stratigraphy is inferred based on the four soil boring control points shown.
Baseline does not portray the minor differences in elevation between soil borings.

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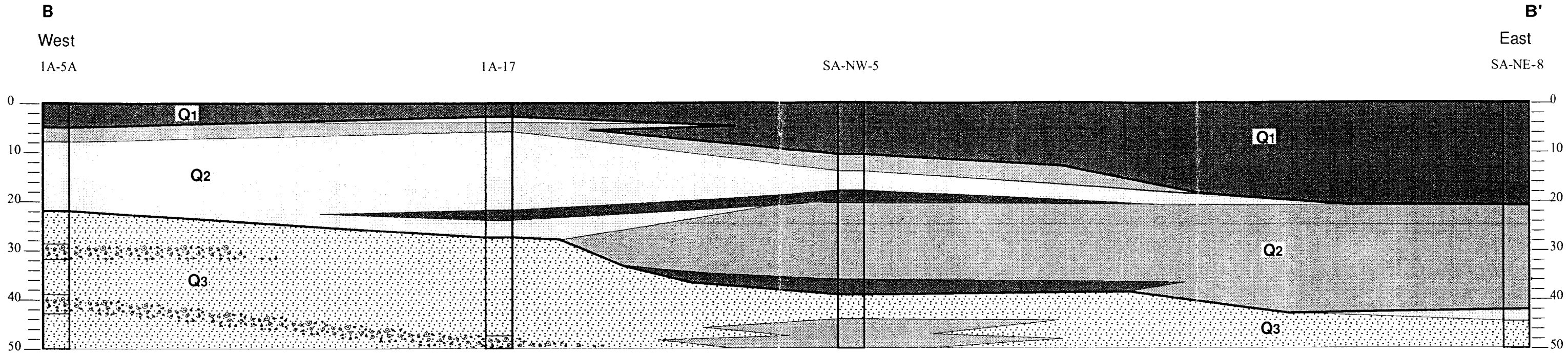
MDRC C-6 Facility
Los Angeles, California

Cross-Section A-A'

September 1997
K/J 974002.00

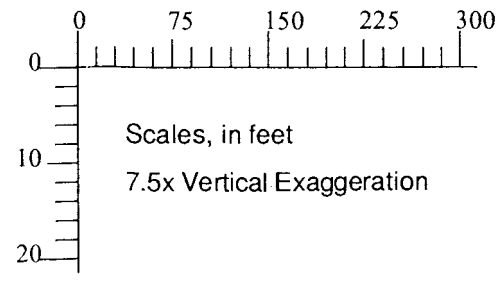
Figure 3

BOE-C6-0046507



EXPLANATION

CL/CH	Clay, Silty Clay, or Sandy Clay
ML	Silt, Clayey Silt, or Sandy Silt
SM	Silty Sand
SP/SW	Sand
SP	Shell Beds in Sand



Notes:

Stratigraphy is inferred based on the four soil boring control points shown.
Baseline does not portray the minor differences in elevation between soil borings.

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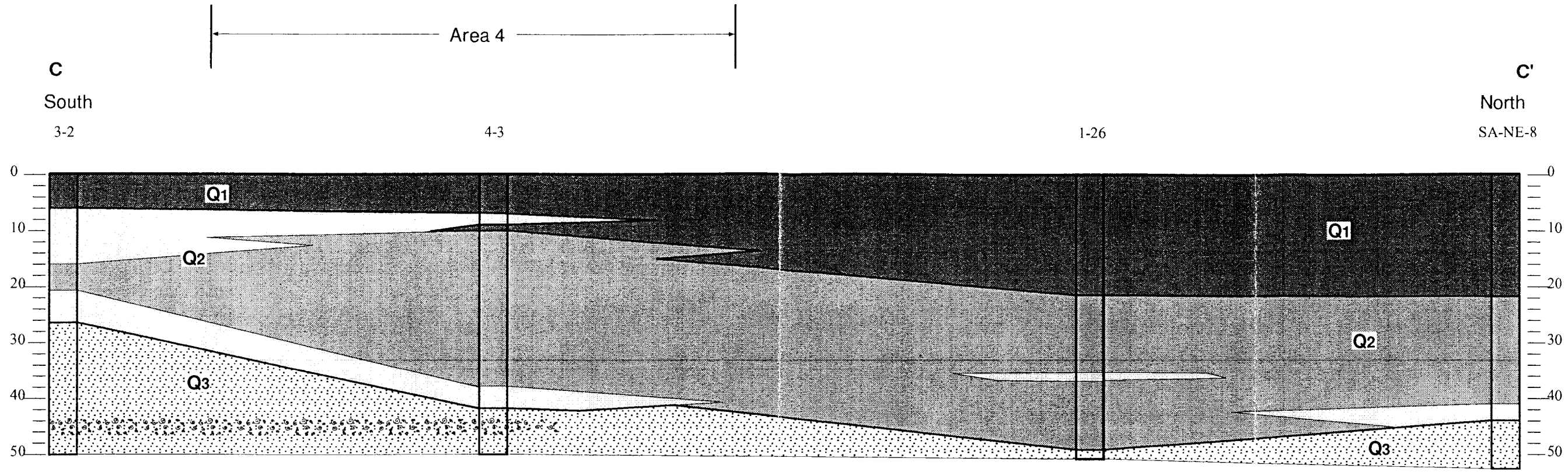
MDRC C-6 Facility
Los Angeles, California

Cross-Section B-B'

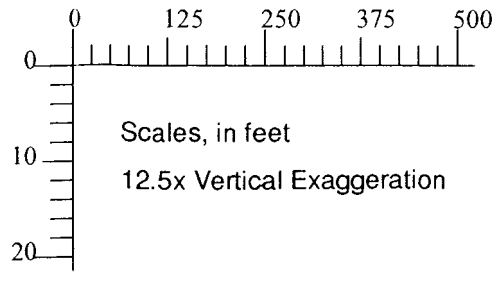
September 1997
K/J 974002.00

Figure 4



EXPLANATION

	CL/CH	Clay, Silty Clay, or Sandy Clay
	ML	Silt, Clayey Silt, or Sandy Silt
	SM	Silty Sand
	SP/SW	Sand
	SP	Shell Beds in Sand



Notes:

Stratigraphy is inferred based on the four soil boring control points shown.
Baseline does not portray the minor differences in elevation between soil borings.

Kennedy/ Jenks Consultants

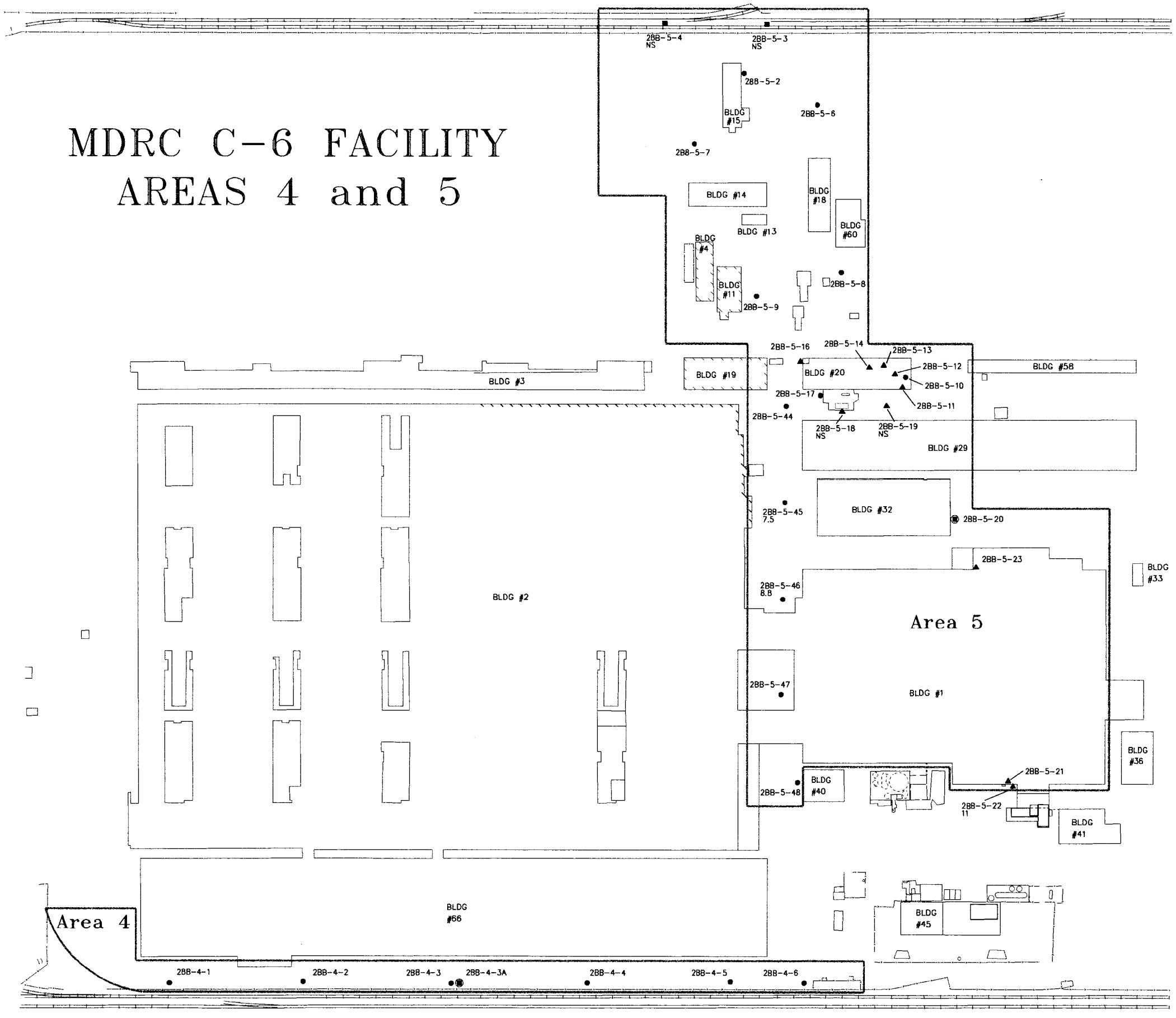
MDRC C-6 Facility
Los Angeles, California

Cross-Section C-C'

September 1997
K/J 974002.00

Figure 5

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

TCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 - 100
	101 - 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

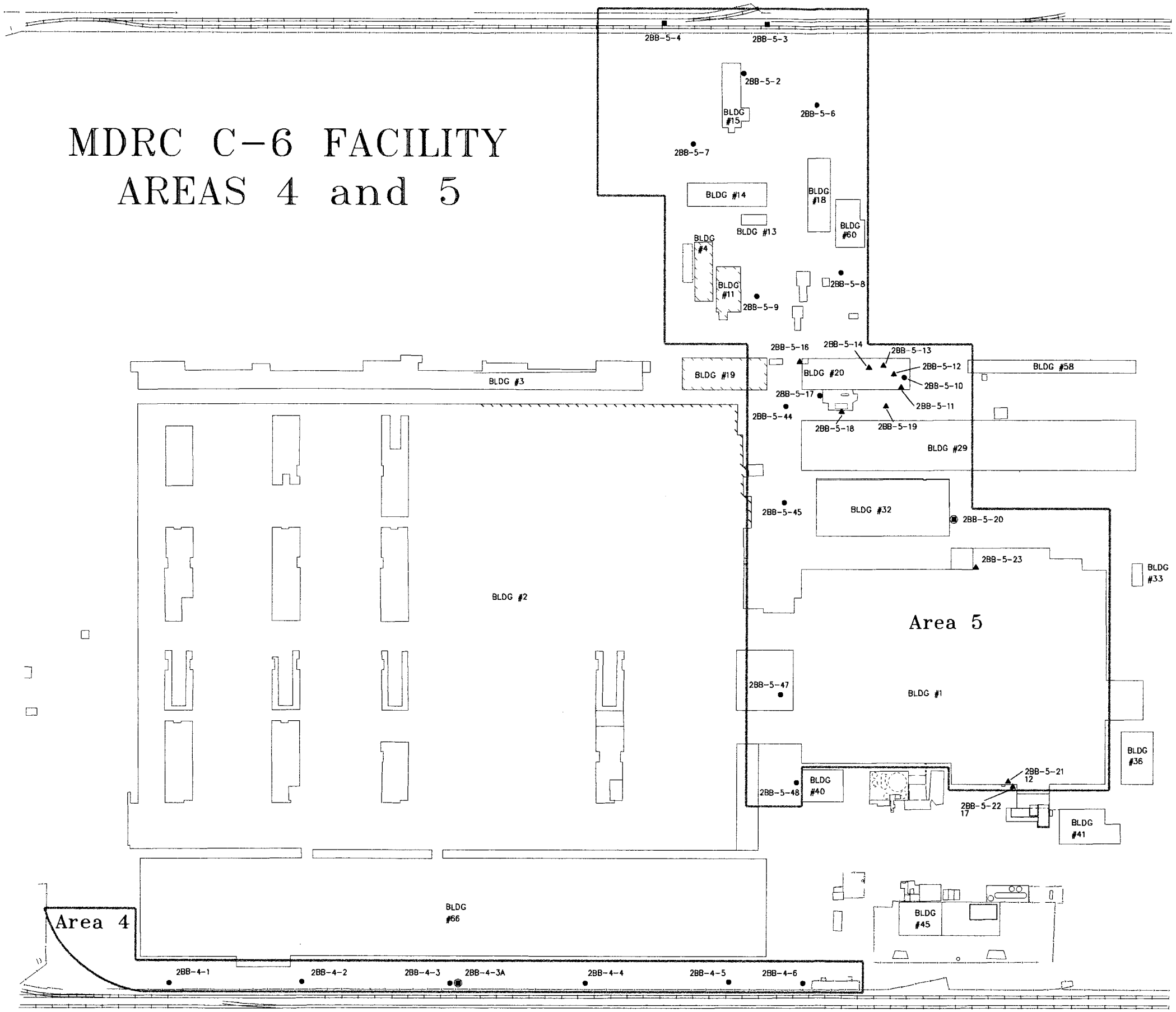
TCE Detections
1-Foot Samples

September 1997
K/J 974002.00

Figure 6A

BOE-C6-0046510

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

TCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

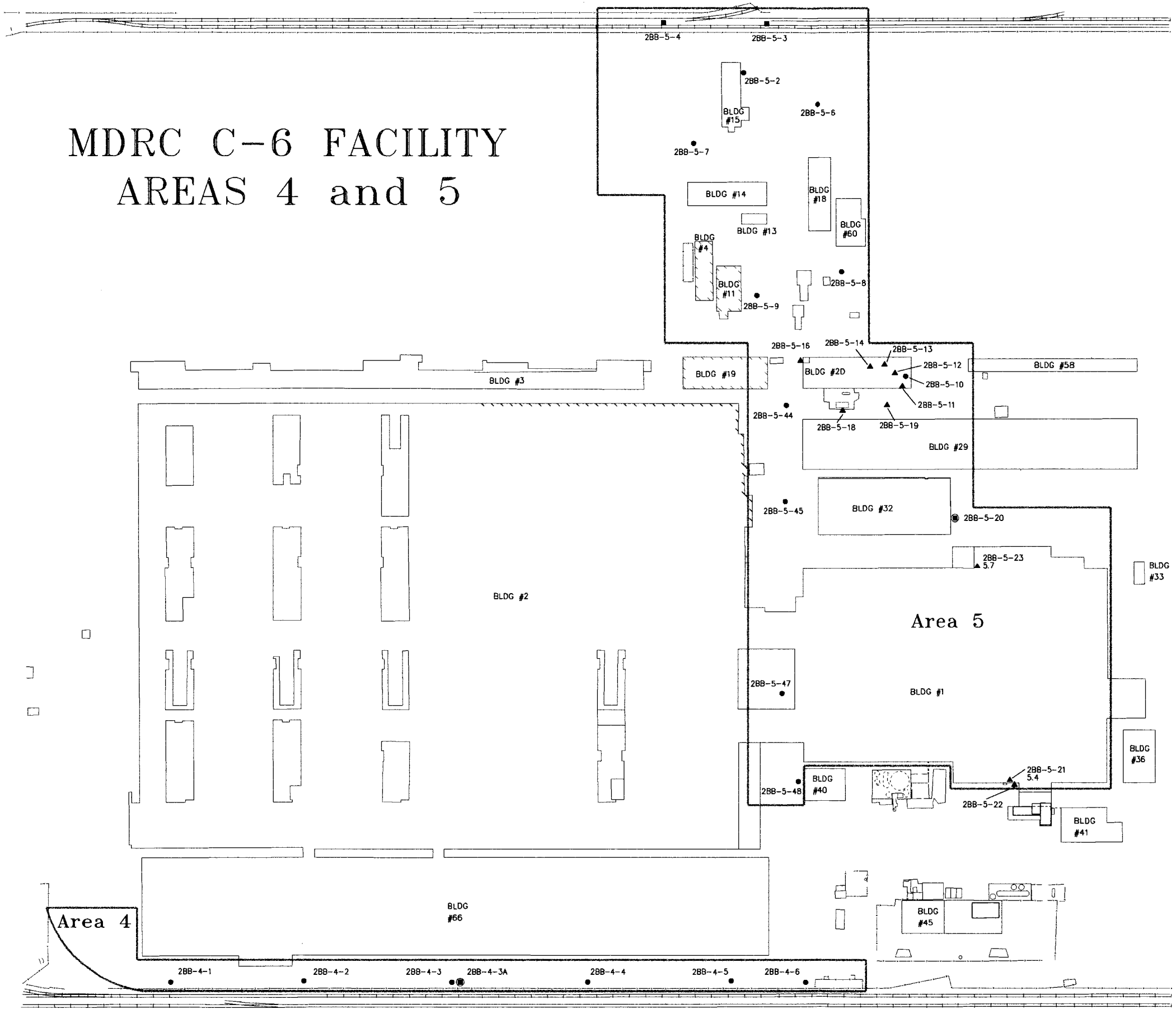
TCE Detections
4-Foot Samples

September 1997
K/J 974002.00

Figure 6B

BOE-C6-0046511

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

TCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

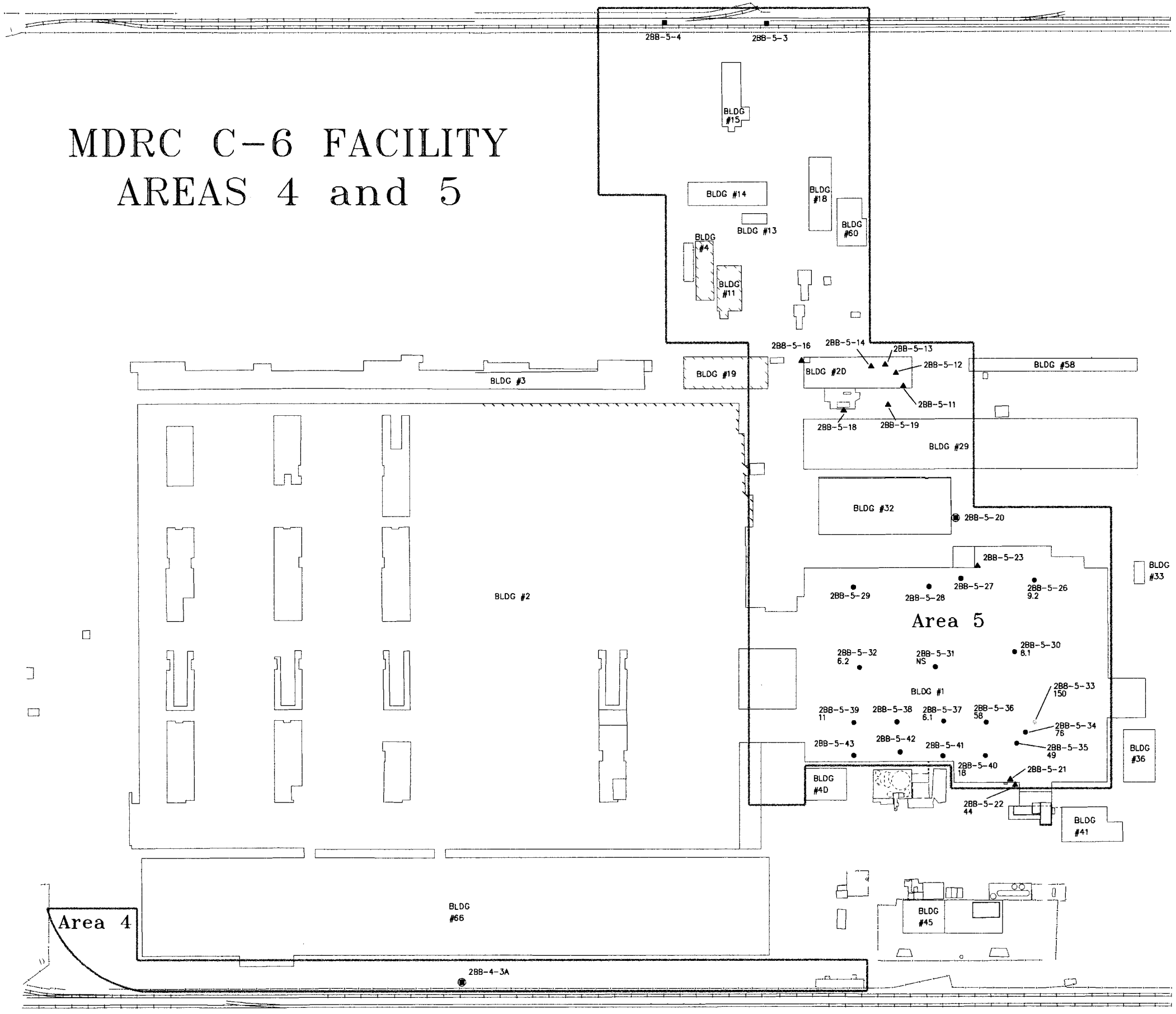
MDRC C-6 Facility
Los Angeles, California

TCE Detections
10-Foot Samples

September 1997
K/J 974002.00

Figure 6C

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

TCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

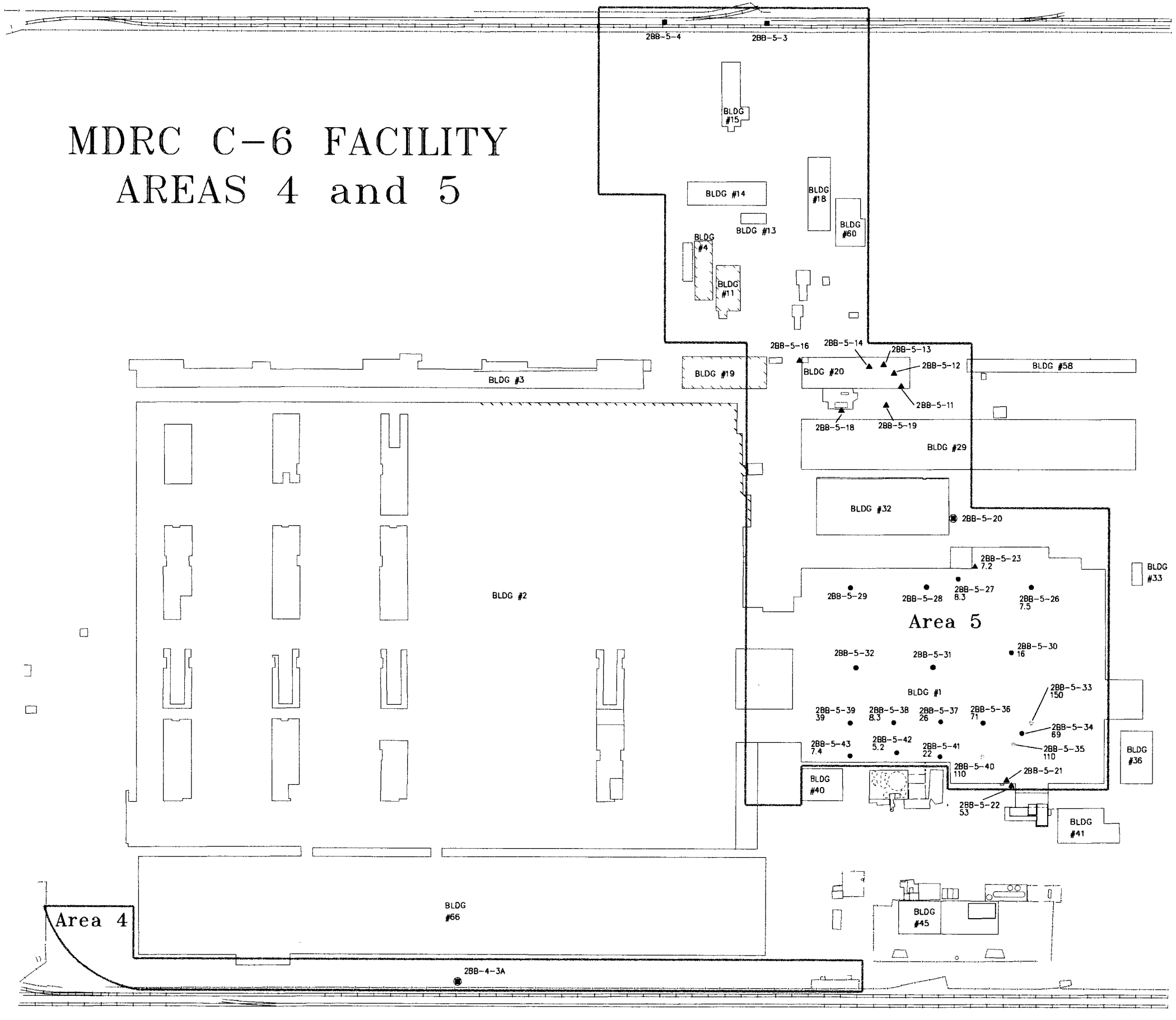
TCE Detections
15 & 20-Foot Samples

September 1997
K/J 974002.00

Figure 6D

BOE-C6-0046513

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

TCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

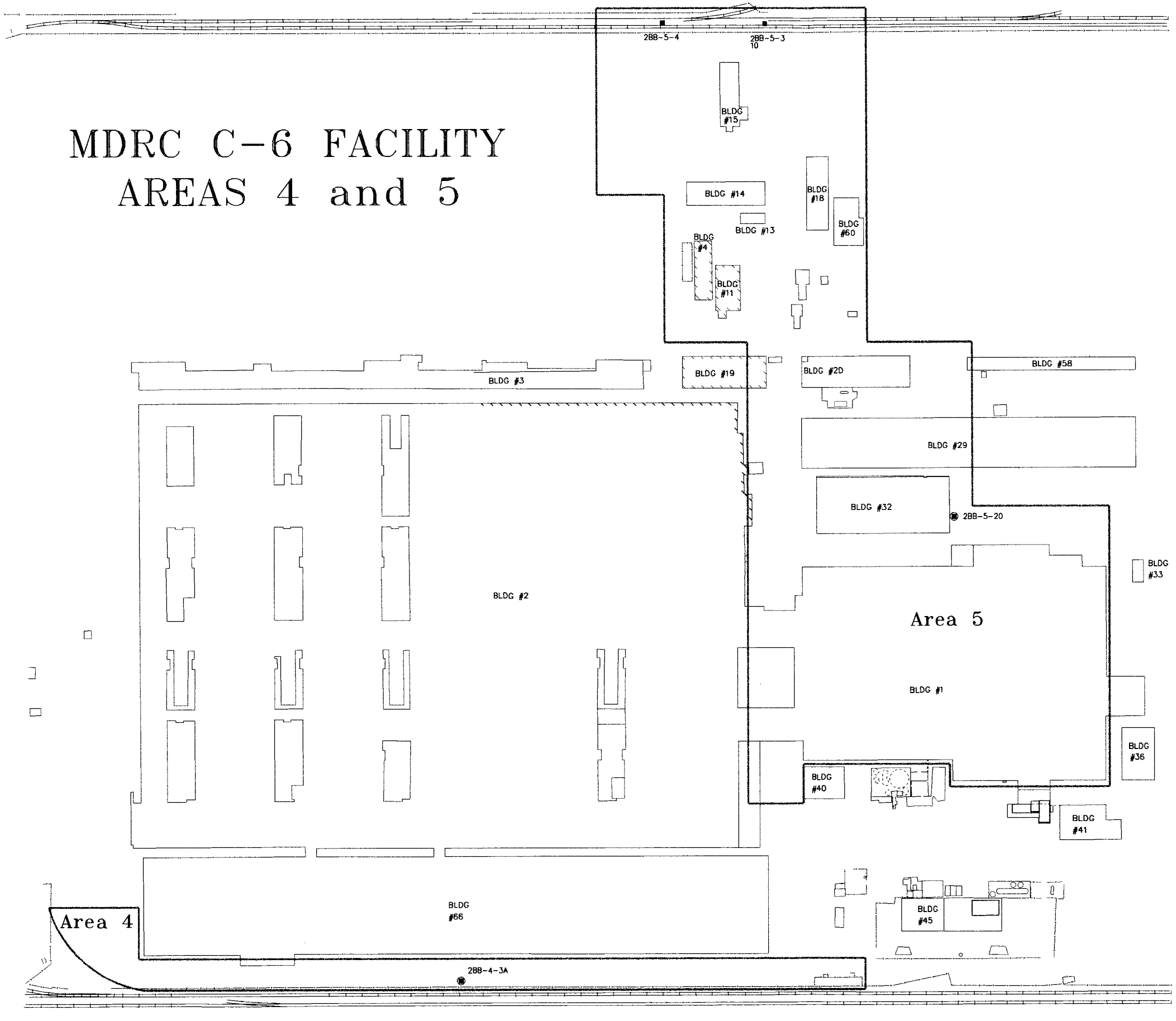
TCE Detections
25 & 30-Foot Samples

September 1997
K/J 974002.00

Figure 6E

BOE-C6-0046514

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

TCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 - 100
	101 - 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

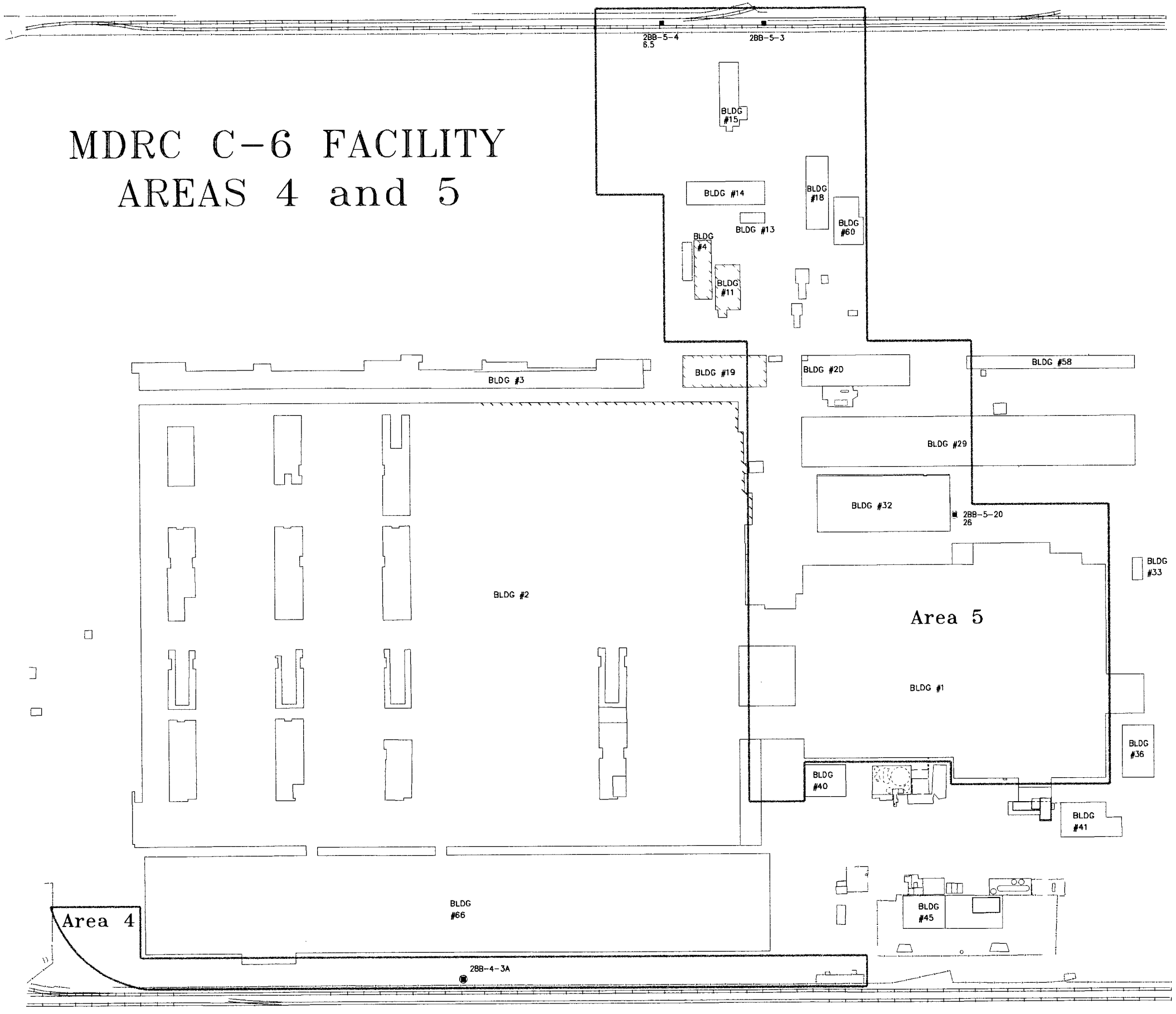
TCE Detections
40-Foot Samples

September 1997
K/J 974002.00

Figure 6F

BOE-C6-0046515

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

TCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

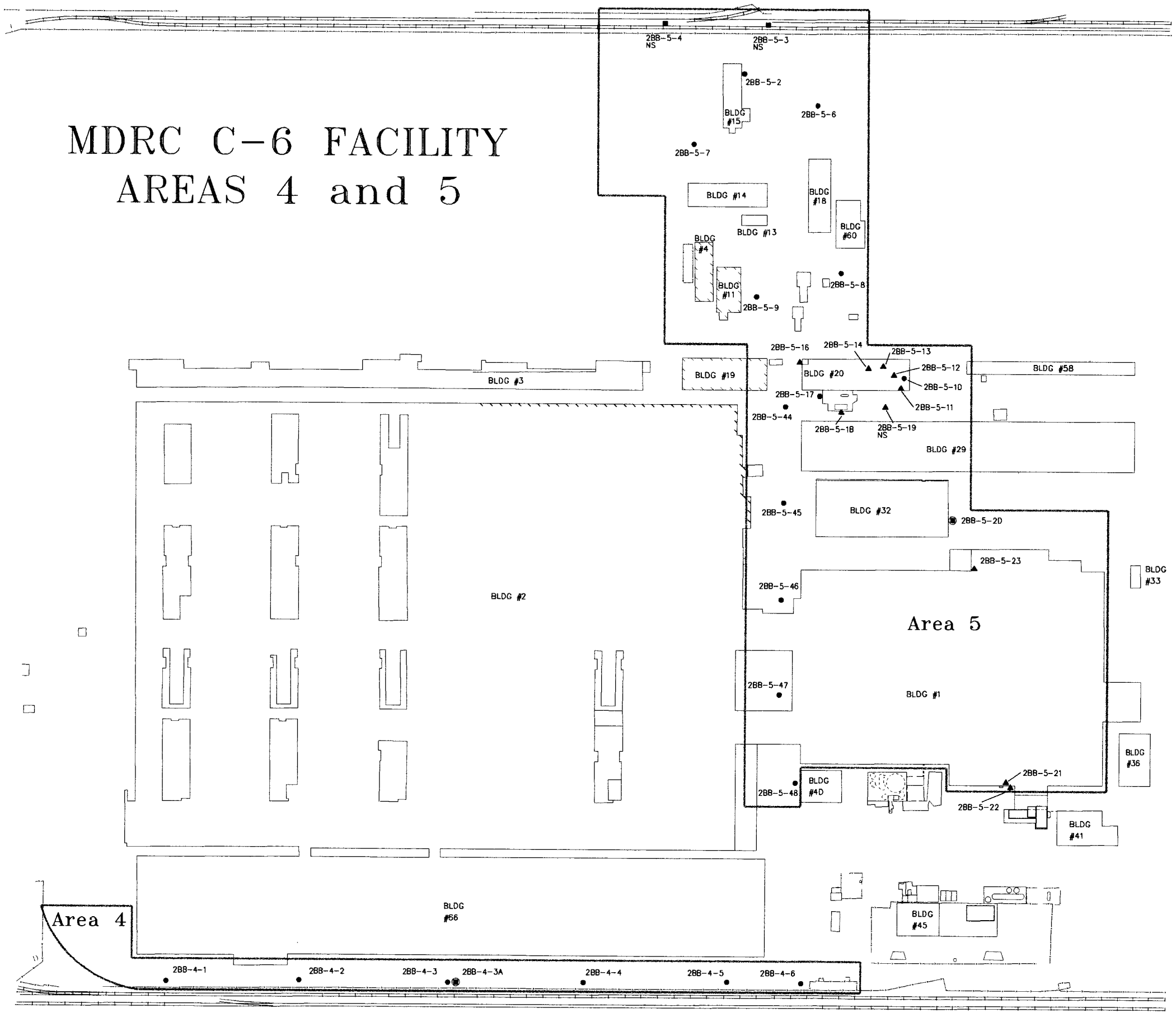
TCE Detections
50-Foot Samples

September 1997
K/J 974002.00

Figure 6G

BOE-C6-0046516

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

1,1-DCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

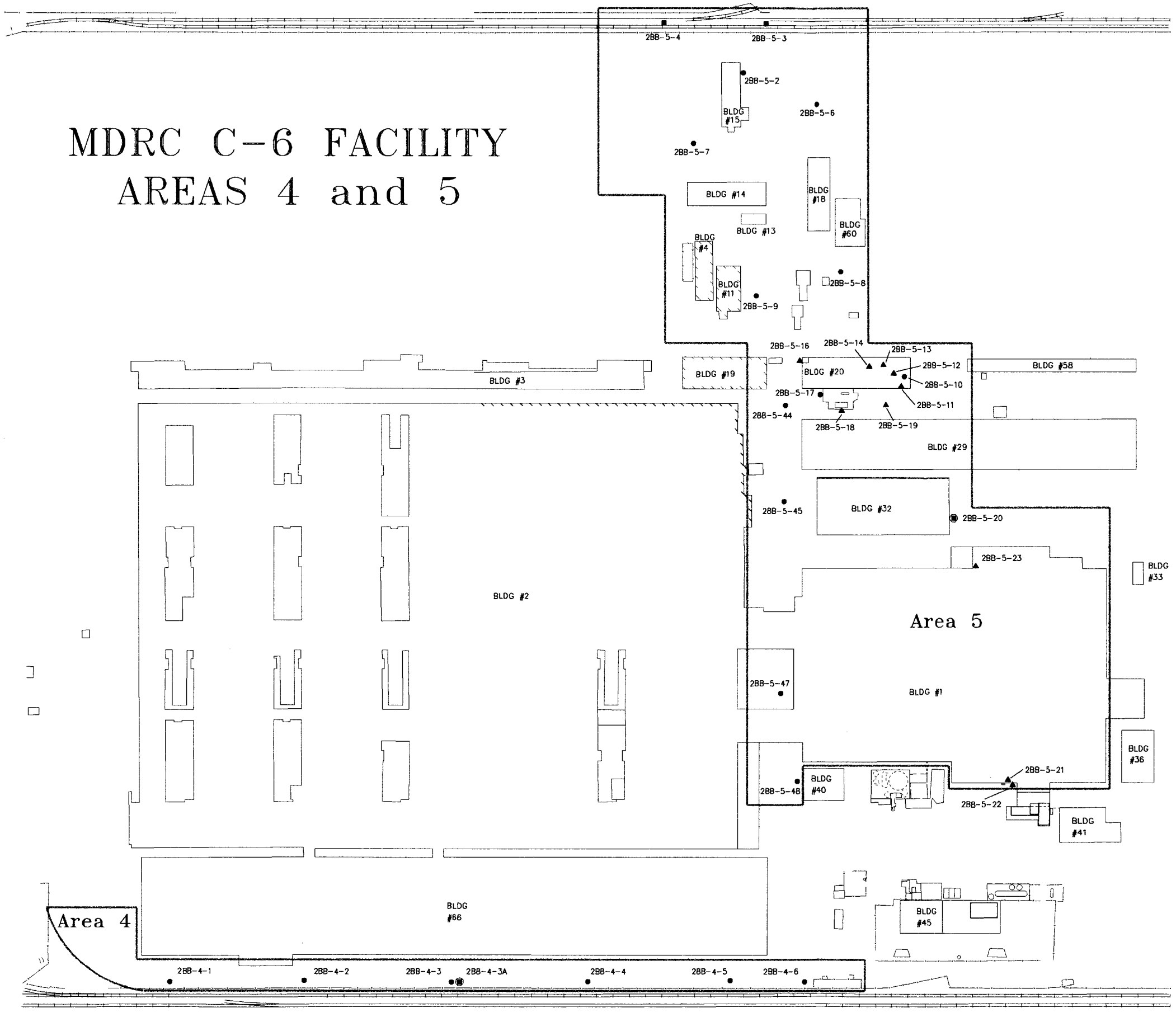
1,1-DCE Detections
1-Foot Samples

September 1997
K/J 974002.00

Figure 7A

BOE-C6-0046517

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

1,1-DCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 - 100
	101 - 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

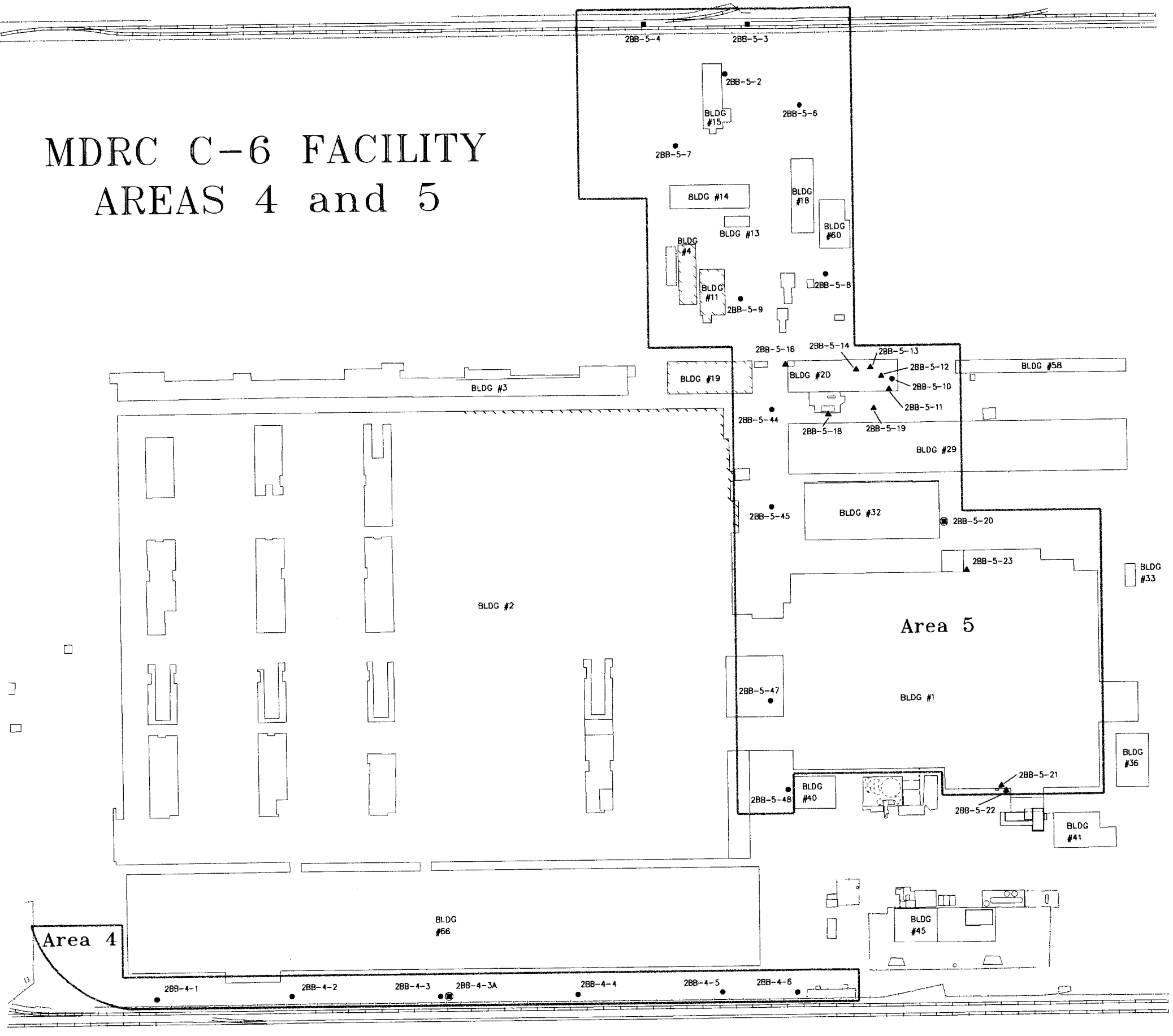
1,1-DCE Detections
4-Foot Samples

September 1997
K/J 974002.00

Figure 7B

BOE-C6-0046518

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

1,1-DCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 - 100
	101 - 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

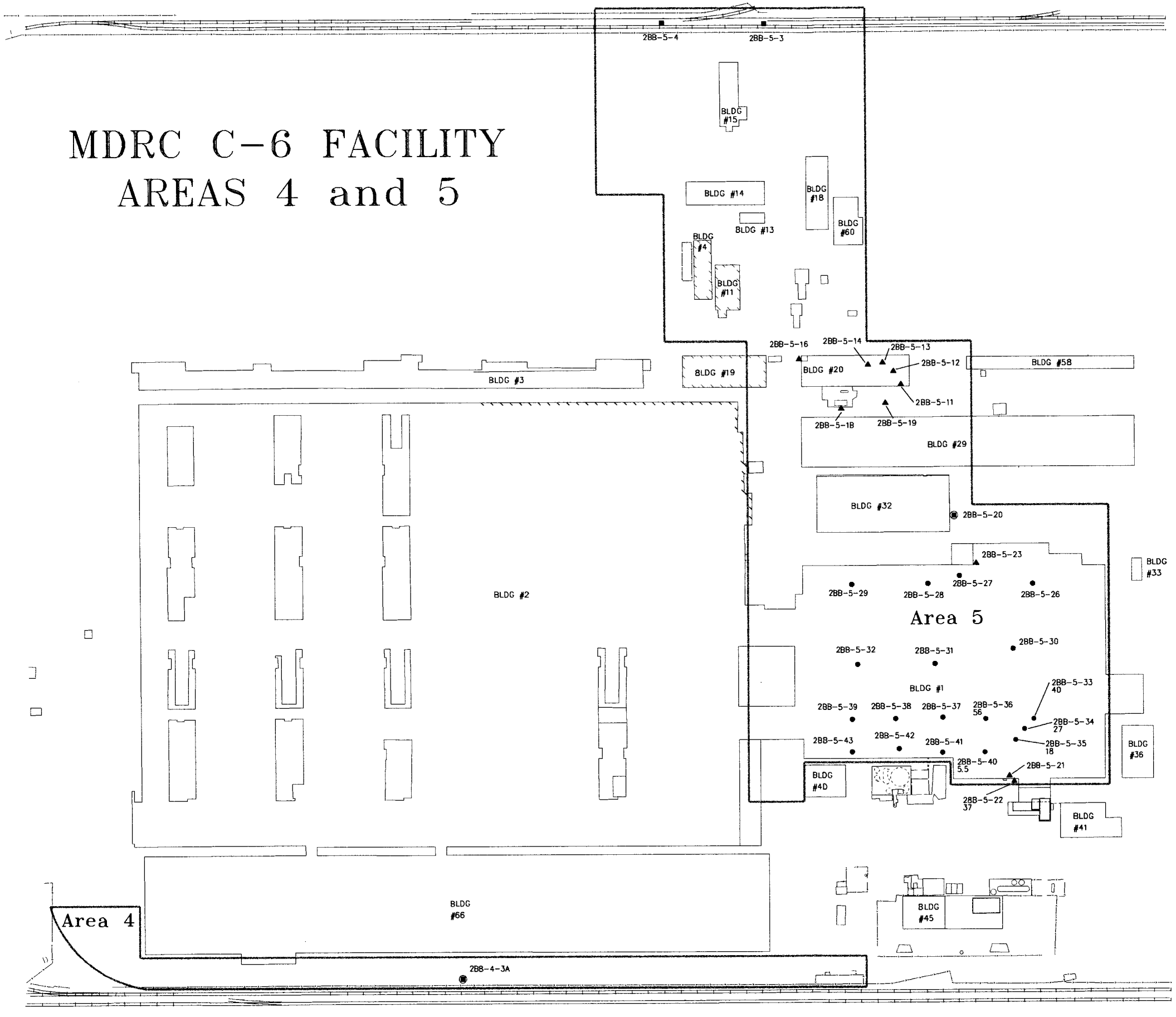
1,1-DCE Detections
10-Foot Samples

September 1997
K/J 974002.00

Figure 7C

BOE-C6-0046519

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

1,1-DCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 - 100
	101 - 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

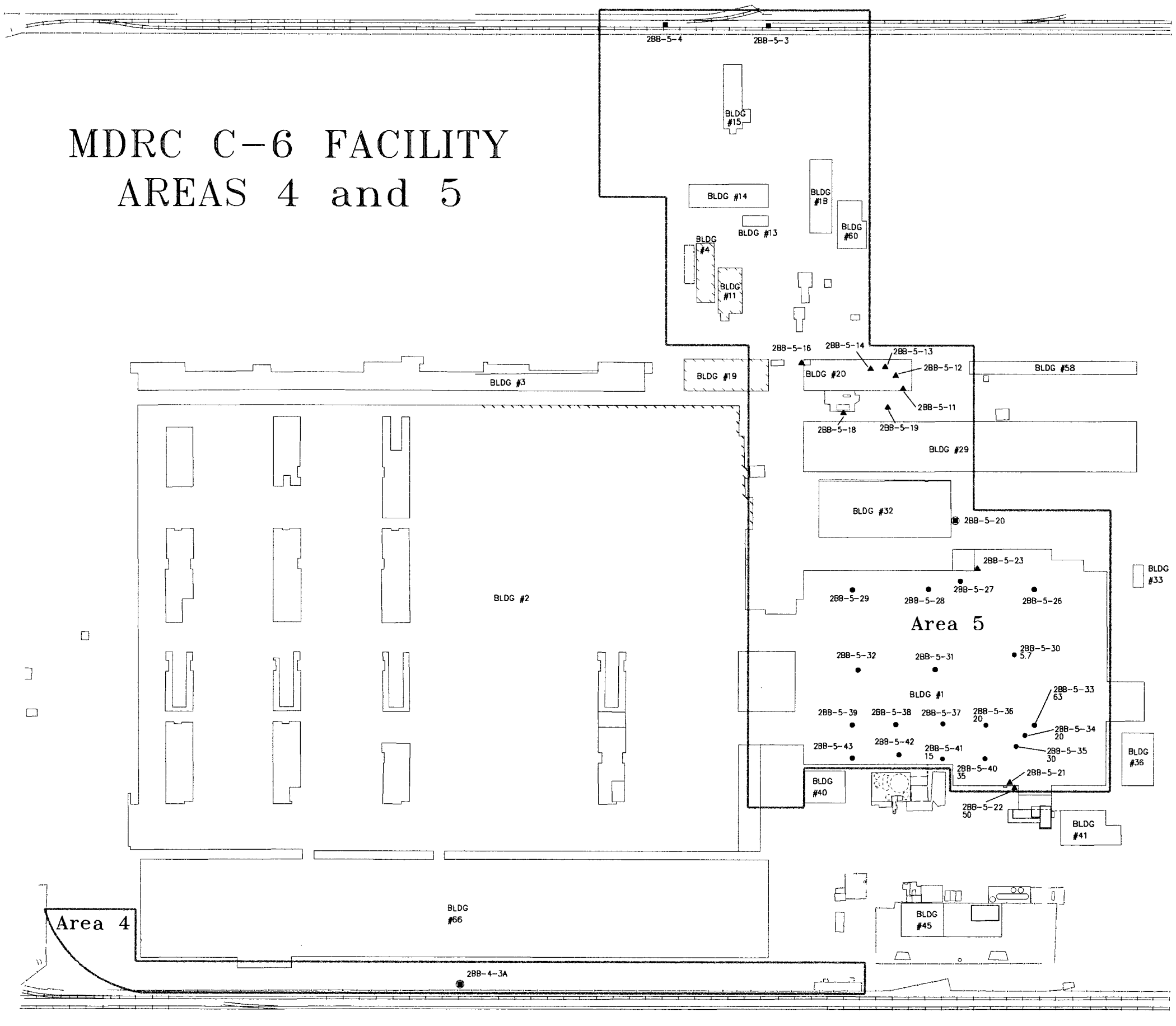
1,1-DCE Detections
15 & 20-Foot Samples

September 1997
K/J 974002.00

Figure 7D

BOE-C6-0046520

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

1,1-DCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 - 100
	101 - 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

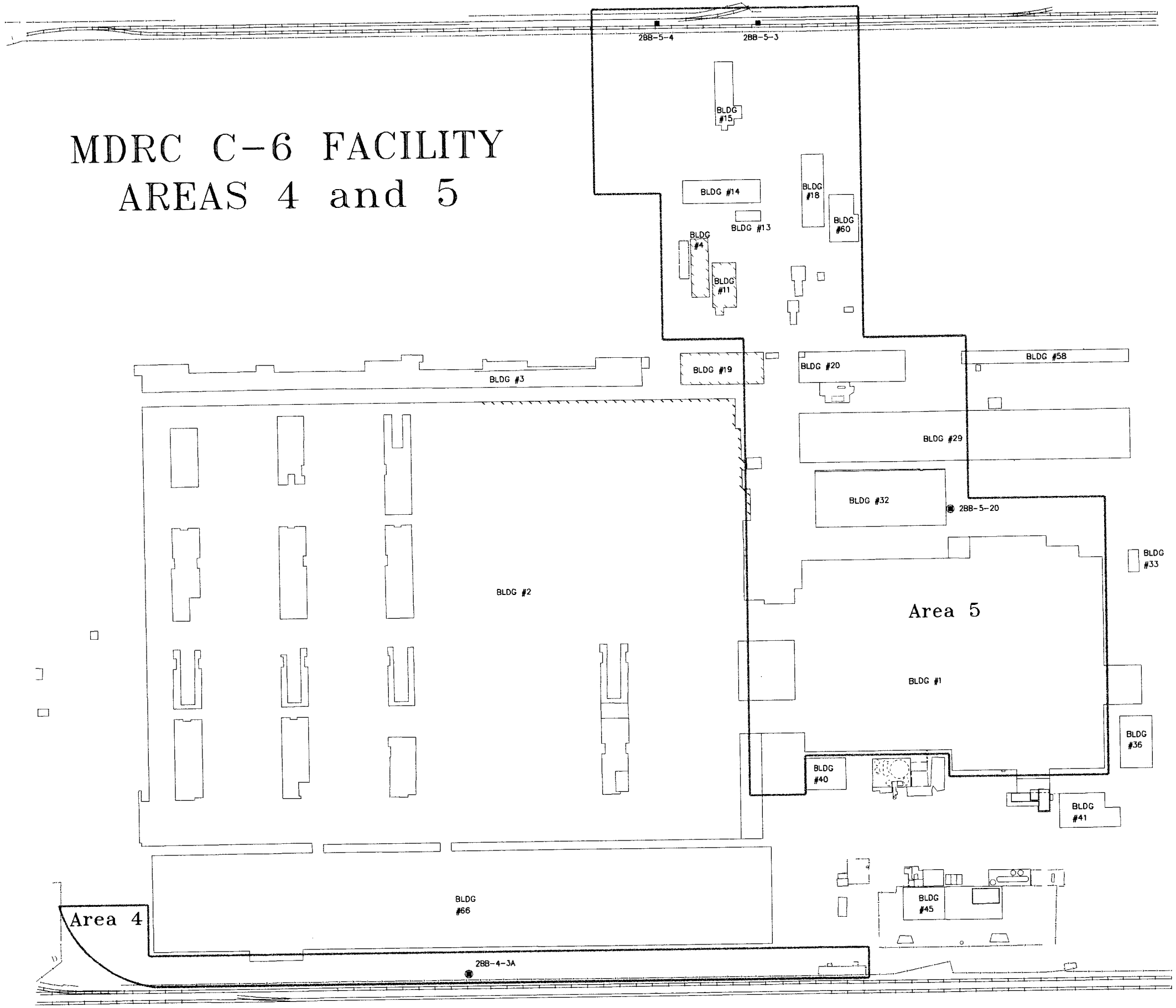
1,1-DCE Detections
25 & 30-Foot Samples

September 1997
K/J 974002.00

Figure 7E

BOE-C6-0046521

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

1,1-DCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 - 100
	101 - 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

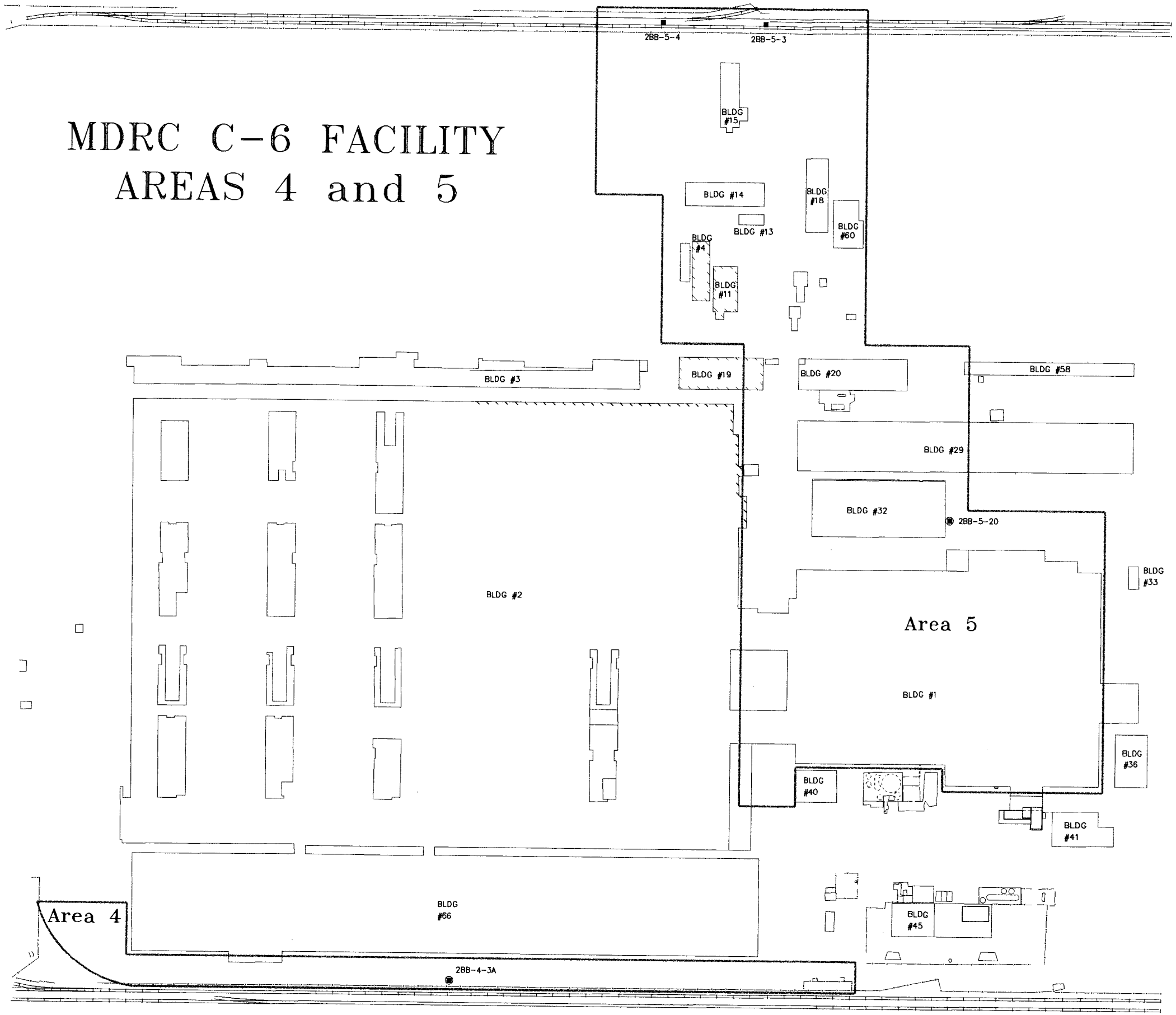
1,1-DCE Detections
40-Foot Samples

September 1997
K/J 974002.00

Figure 7F

BOE-C6-0046522

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

1,1-DCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 - 100
	101 - 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

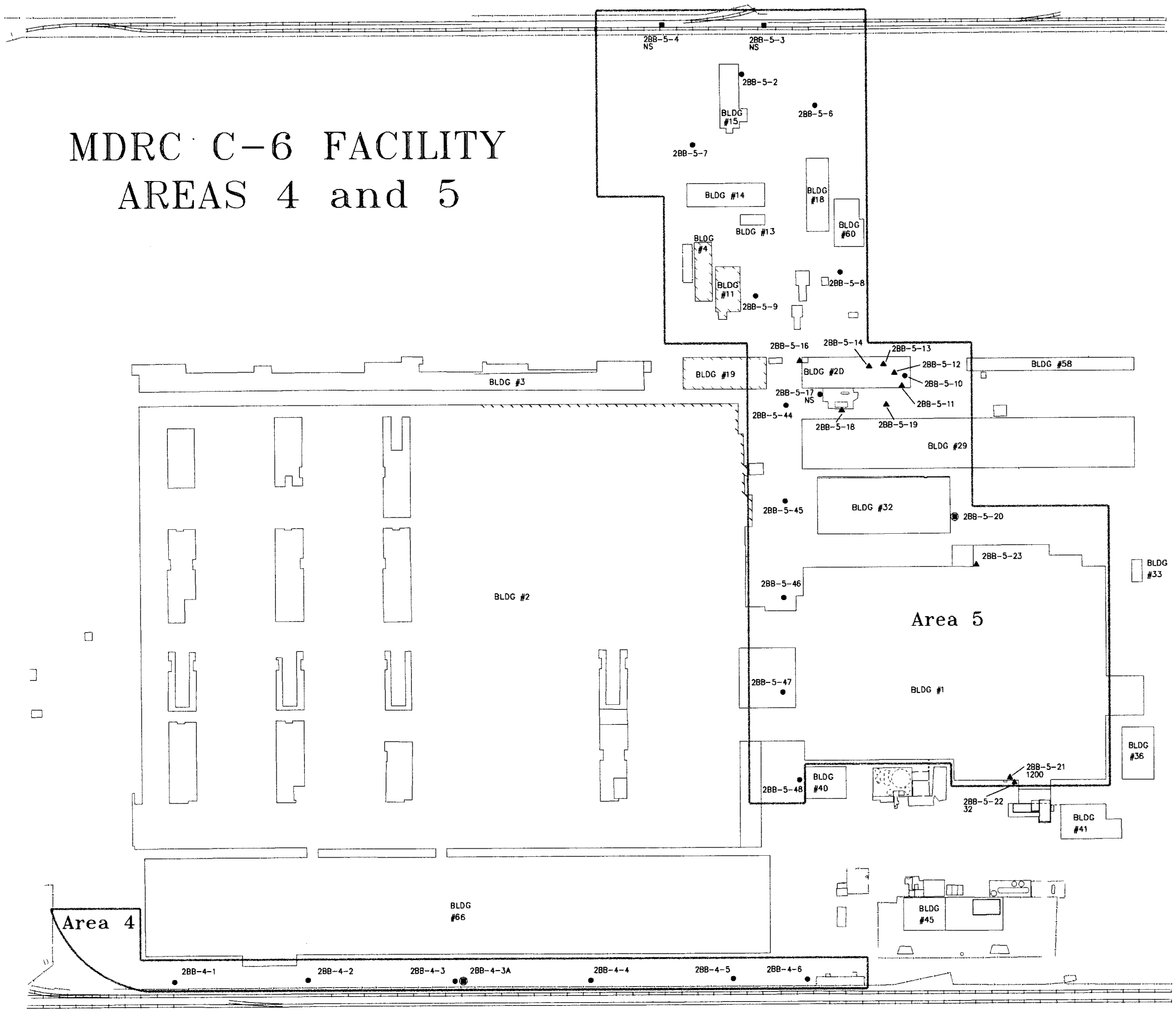
1,1-DCE Detections
50-Foot Samples

September 1997
K/J 974002.00

Figure 7G

BOE-C6-0046523

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

PCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ⊛ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

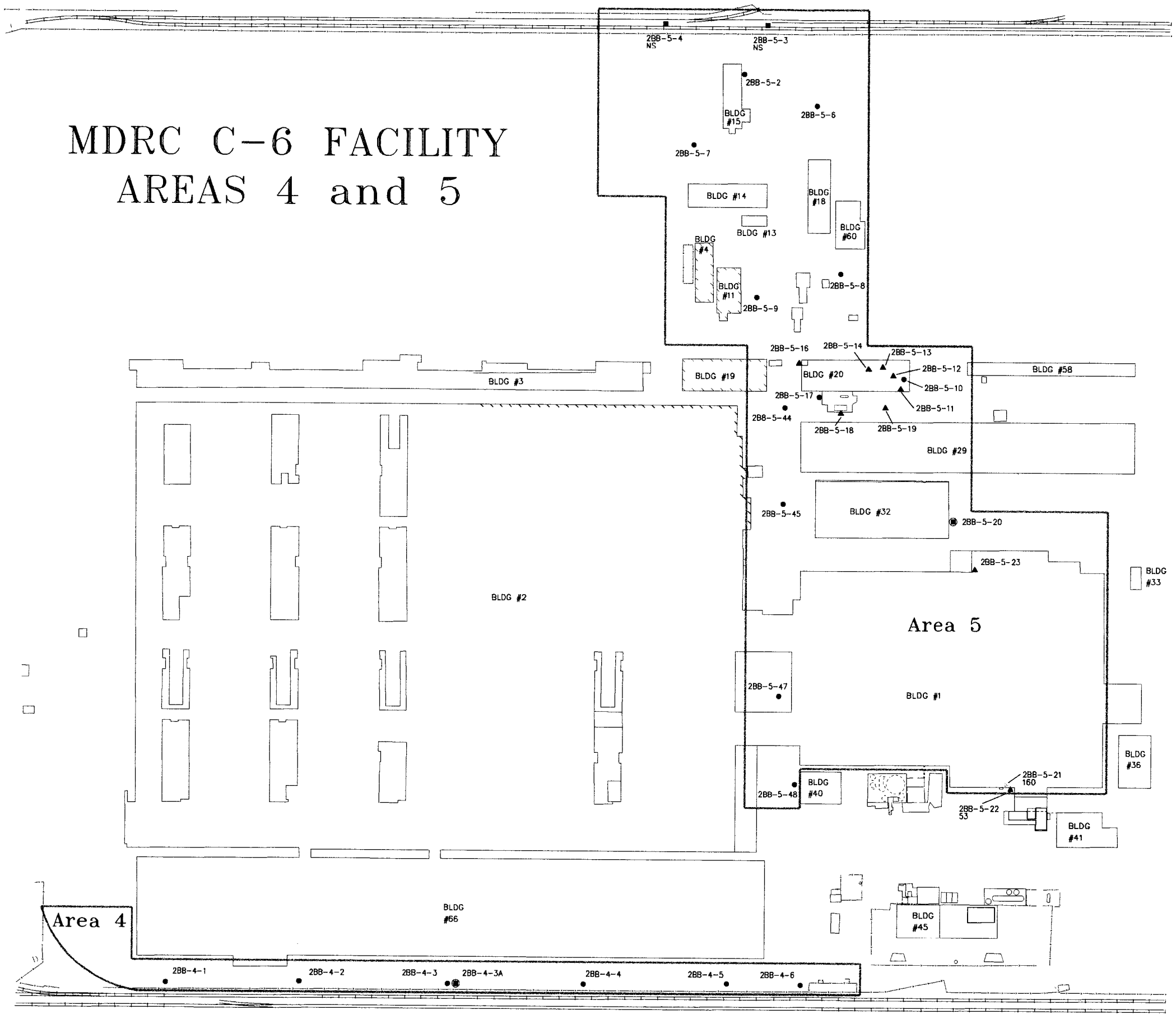
PCE Detections
1-Foot Samples

September 1997
K/J 974002.00

Figure 8A

BOE-C6-0046524

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

PCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

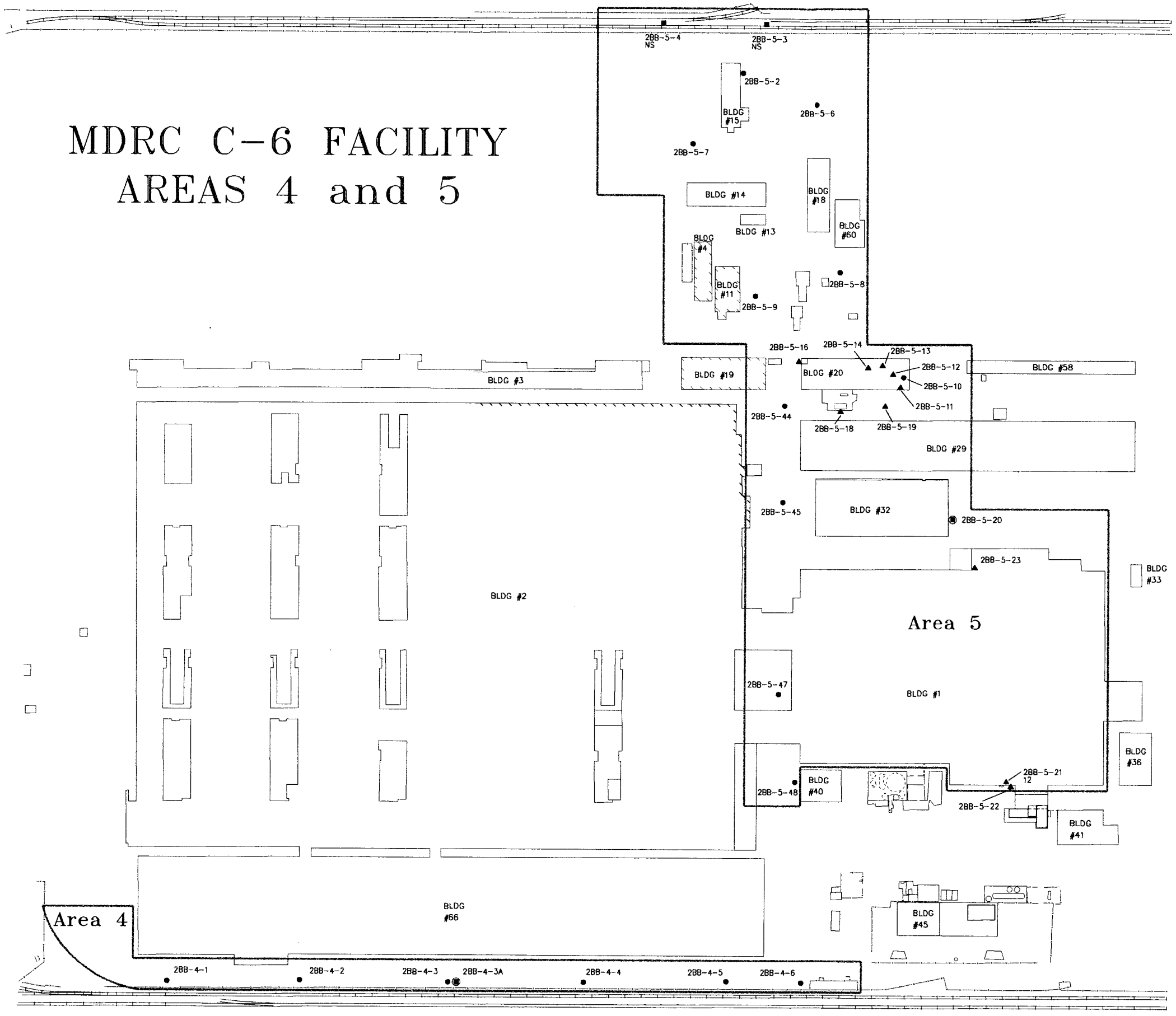
PCE Detections
4-Foot Samples

September 1997
K/J 974002.00

Figure 8B

BOE-C6-0046525

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

PCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 - 100
	101 - 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

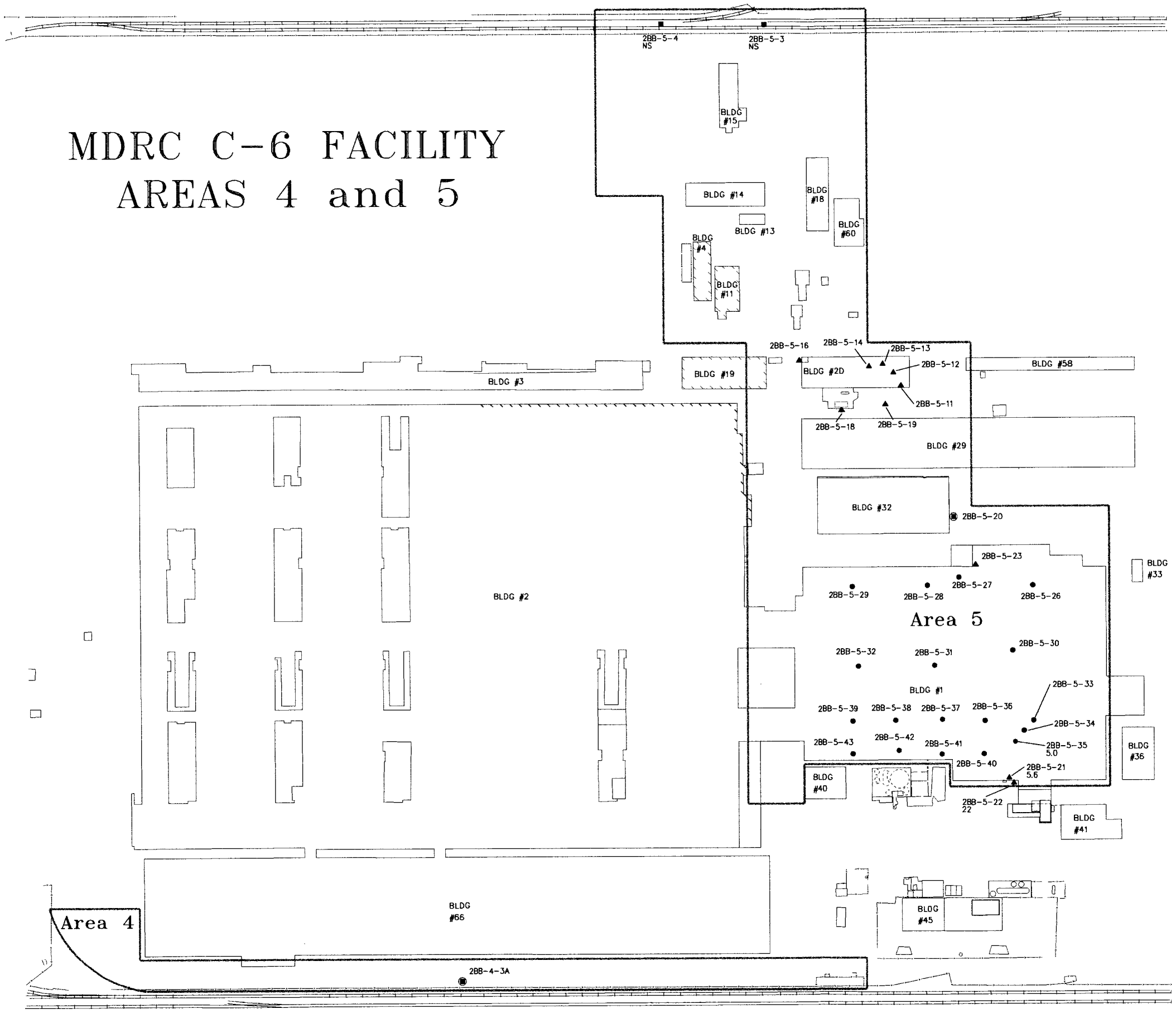
PCE Detections
10-Foot Samples

September 1997
K/J 974002.00

Figure 8C

BOE-C6-0046526

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

PCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ⊛ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

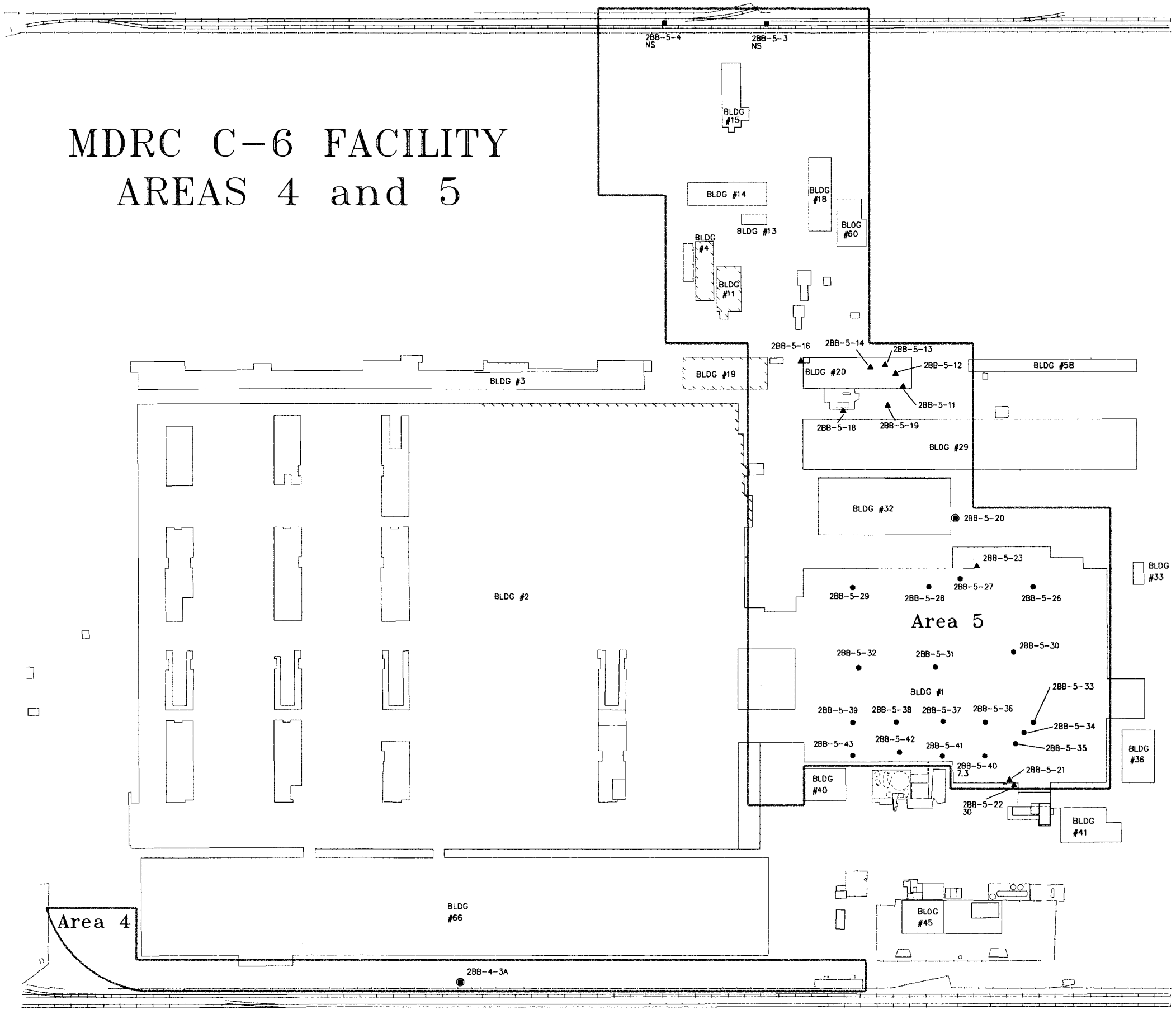
PCE Detections
15 & 20-Foot Samples

September 1997
K/J 974002.00

Figure 8D

BOE-C6-0046527

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

PCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

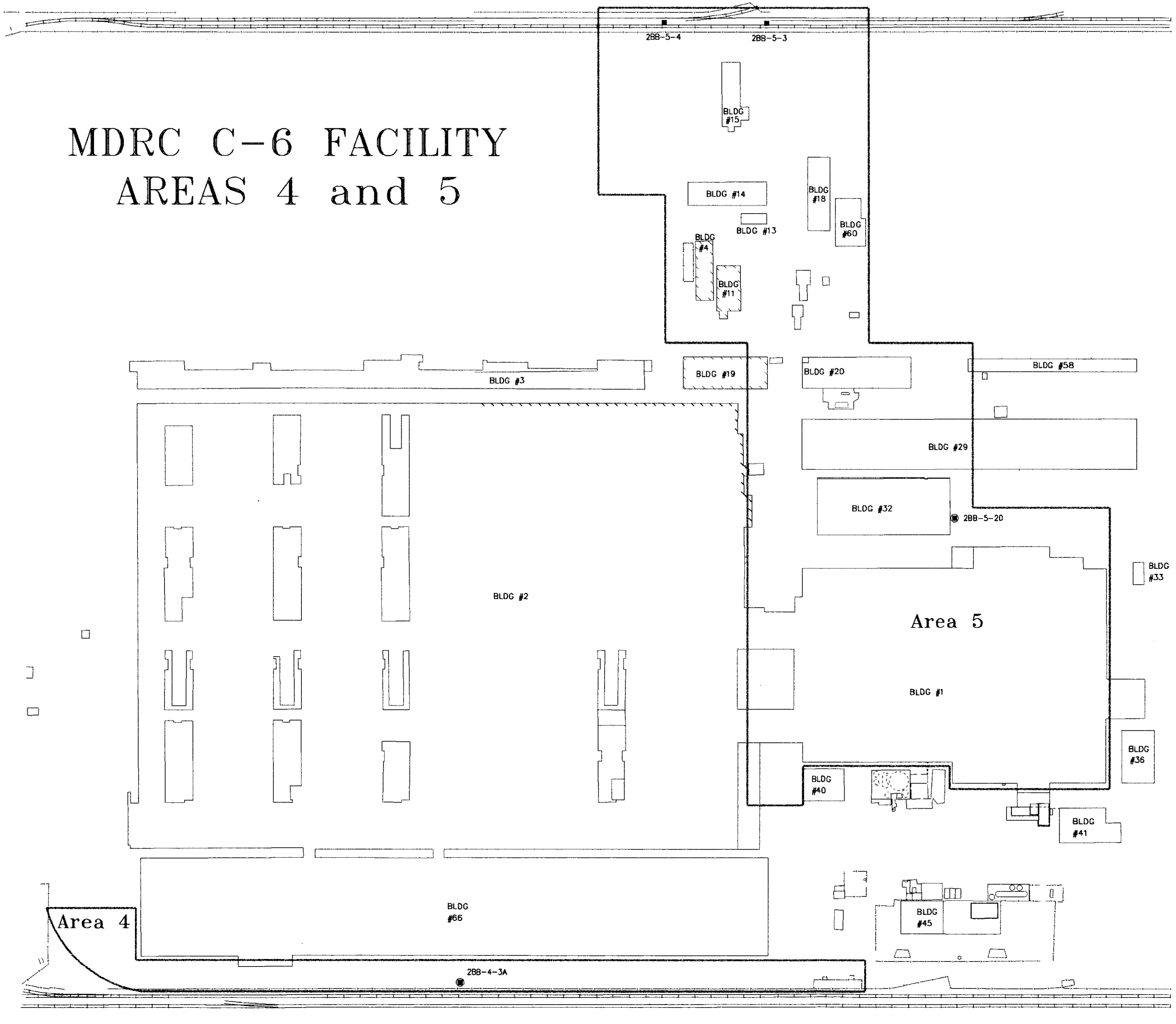
MDRC C-6 Facility
Los Angeles, California

PCE Detections
25 & 30-Foot Samples

September 1997
K/J 974002.00

Figure 8E

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

PCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

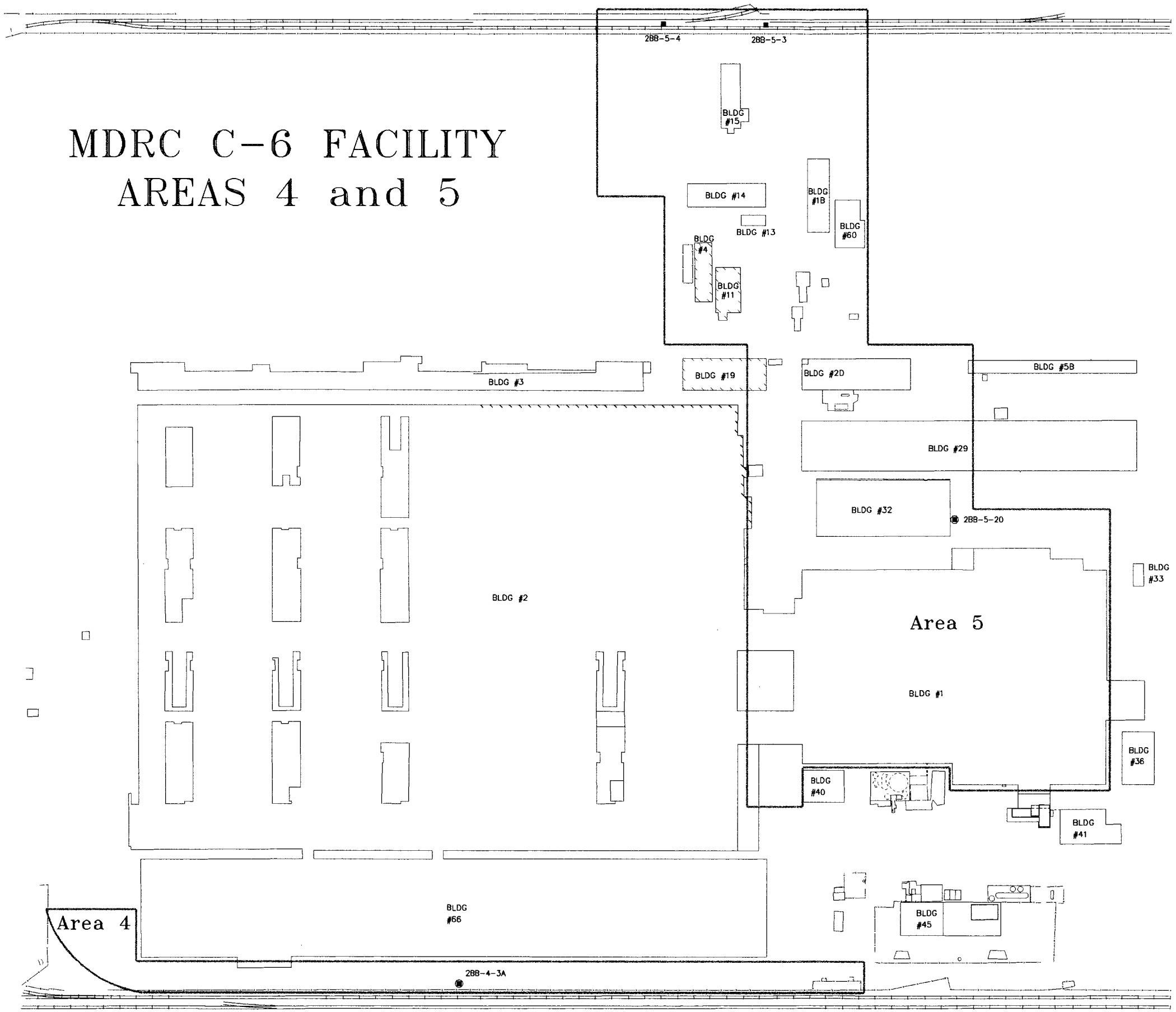
PCE Detections
40-Foot Samples

September 1997
K/J 974002.00

Figure 8F

BOE-C6-0046529

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

PCE Concentration (ug/kg)	
	NOT DETECTED
	< 50
	51 – 100
	101 – 500
	> 500
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

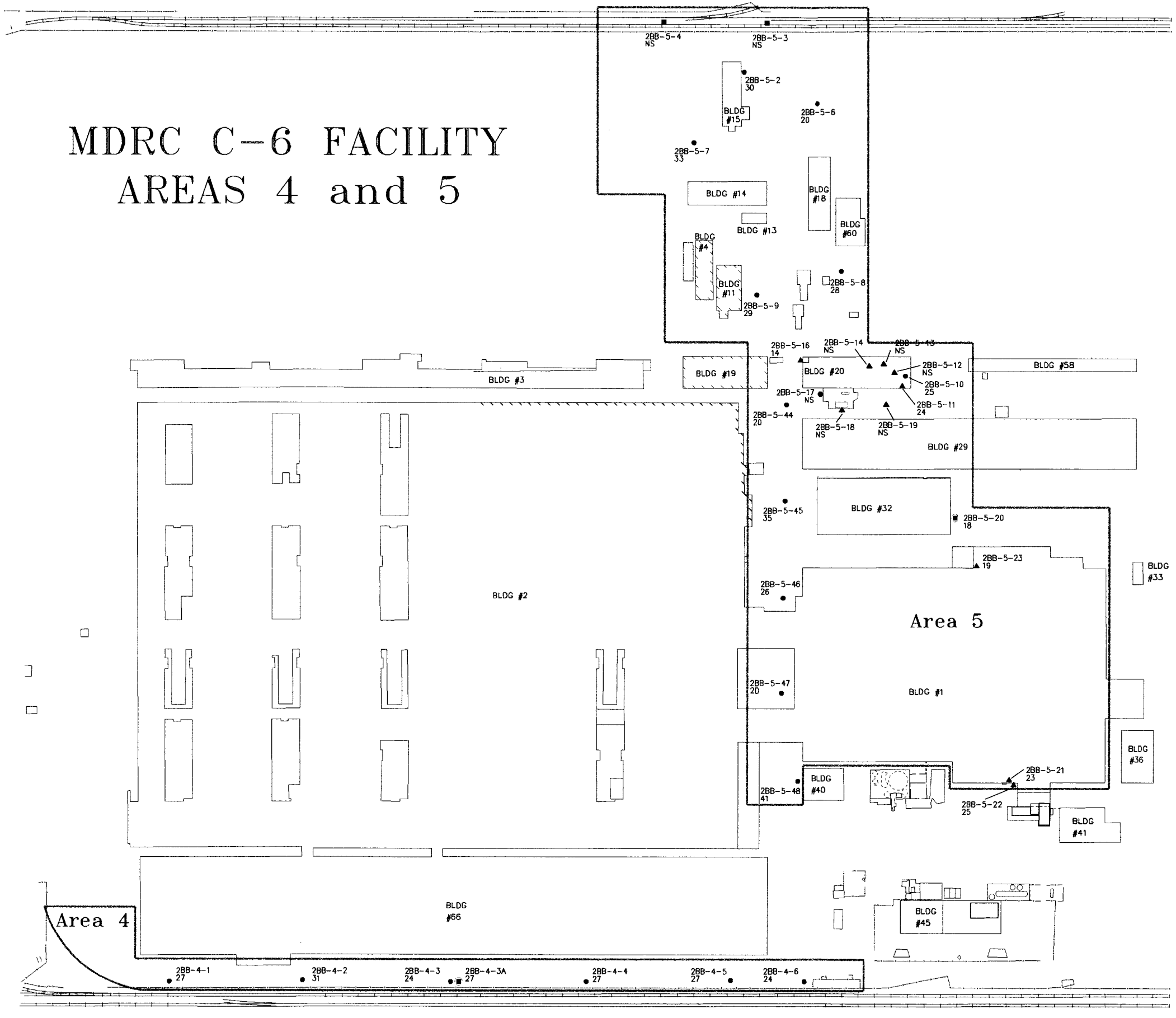
PCE Detections
50-Foot Samples

September 1997
K/J 974002.00

Figure 8G

BOE-C6-0046530

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Total Chromium Concentration (mg/kg)	
	NOT DETECTED
	< 20
	21 – 50
	51 – 100
	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

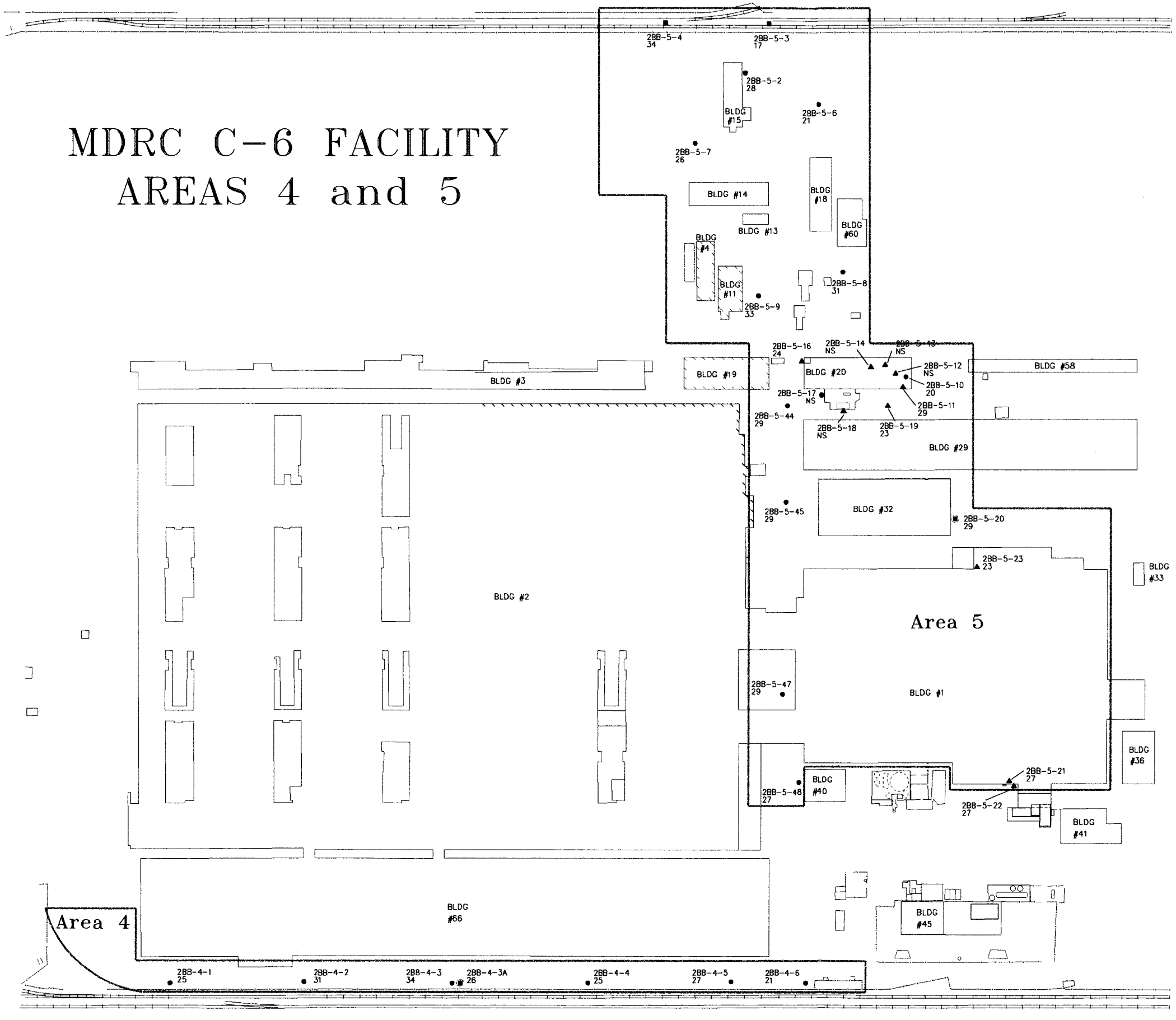
MDRC C-6 Facility
Los Angeles, California

Total Chromium Detections
1-Foot Samples

September 1997
K/J 974002.00

Figure 9A

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Total Chromium Concentration (mg/kg)	
	NOT DETECTED
	< 20
	21 – 50
	51 – 100
	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ⊗ 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

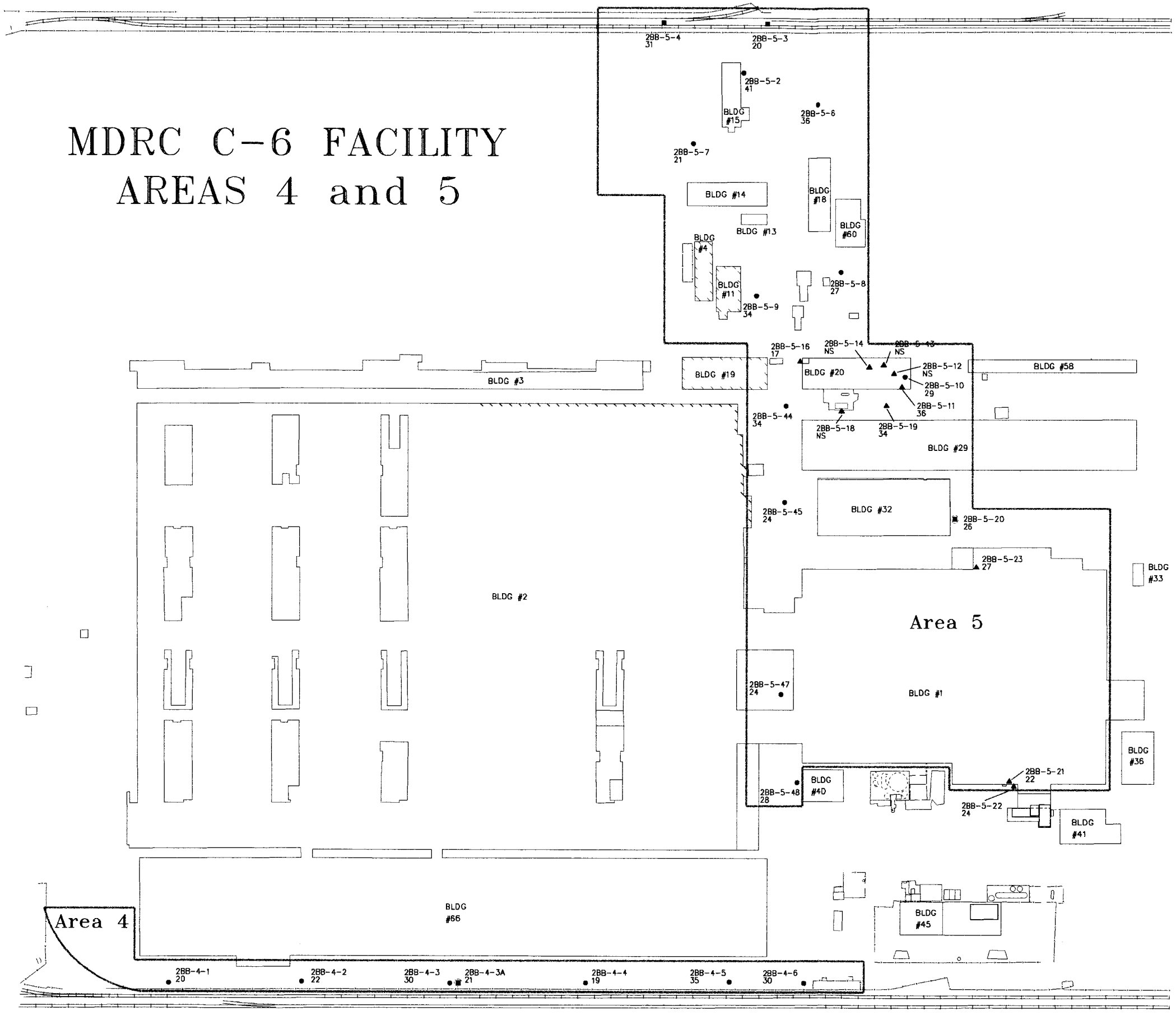
Total Chromium Detections
4-Foot Samples

September 1997
K/J 974002.00

Figure 9B

BOE-C6-0046532

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Total Chromium Concentration (mg/kg)	
	NOT DETECTED
	< 20
	21 – 50
	51 – 100
	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

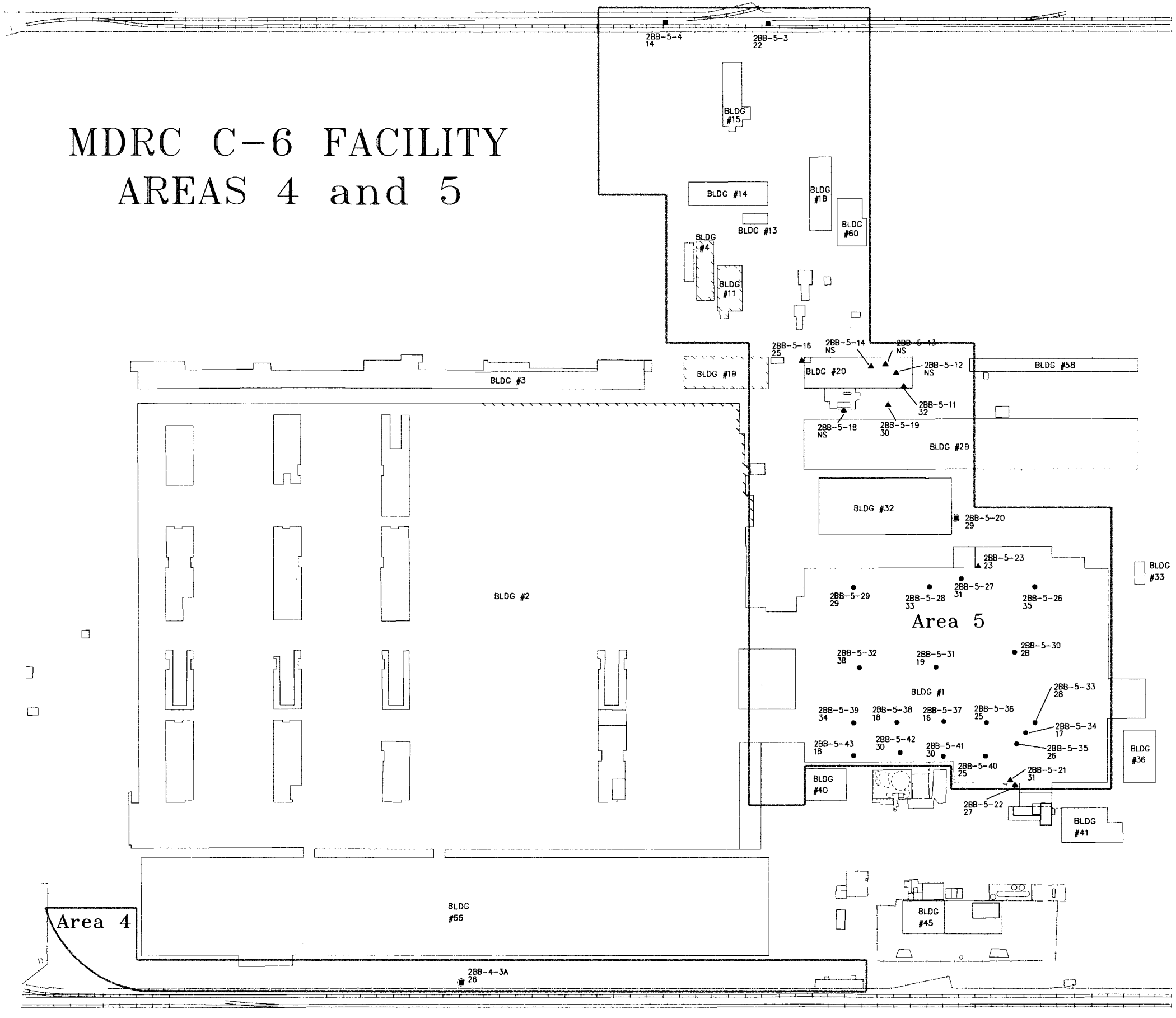
MDRC C-6 Facility
Los Angeles, California

Total Chromium Detections
10-Foot Samples

September 1997
K/J 974002.00

Figure 9C

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Total Chromium Concentration (mg/kg)	
■	NOT DETECTED
■	< 20
■	21 – 50
■	51 – 100
■	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

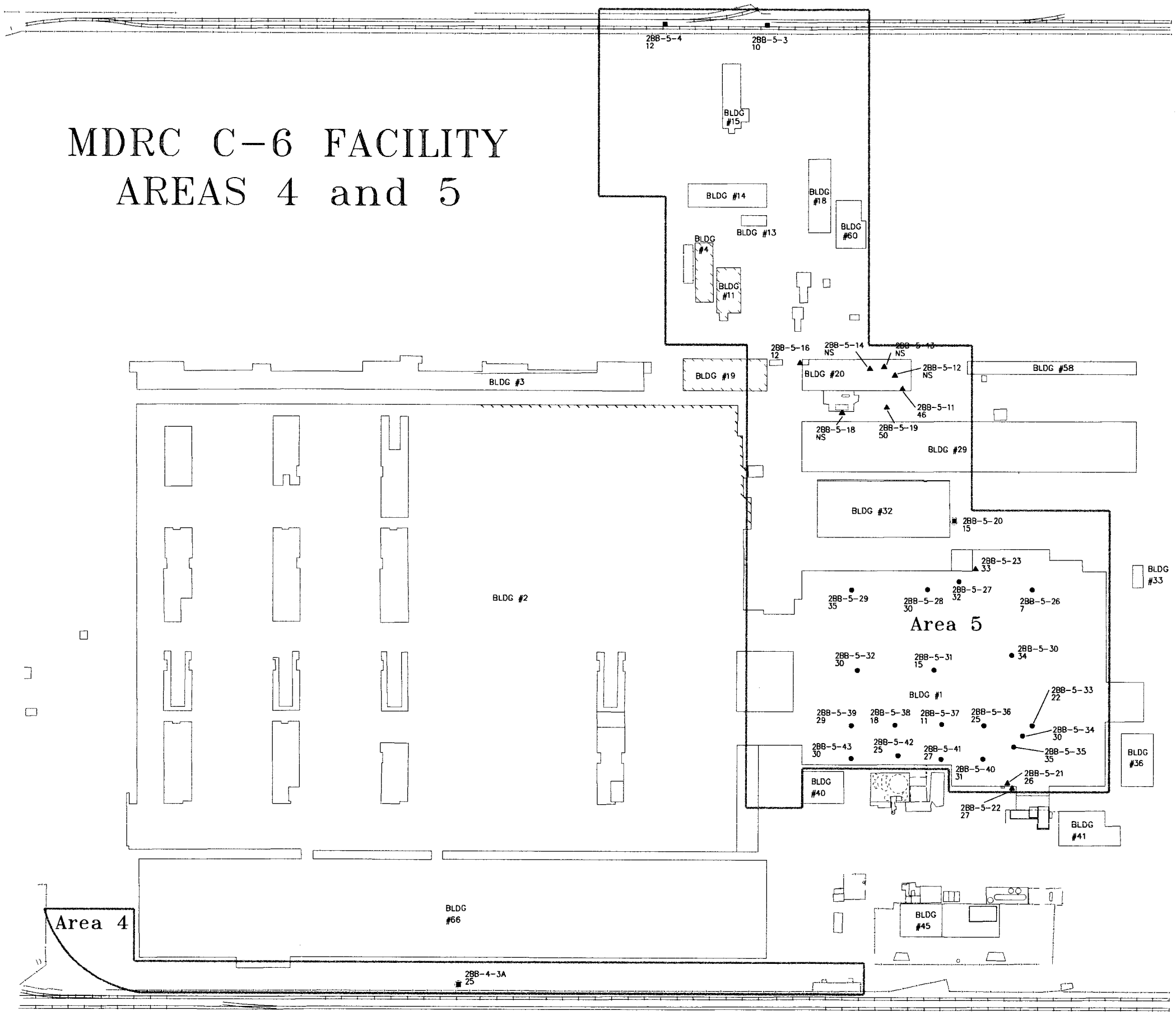
Total Chromium Detections
15 & 20-Foot Samples

September 1997
K/J 974002.00

Figure 9D

BOE-C6-0046534

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Total Chromium Concentration (mg/kg)	
■	NOT DETECTED
■	< 20
■	21 – 50
■	51 – 100
■	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◙ 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

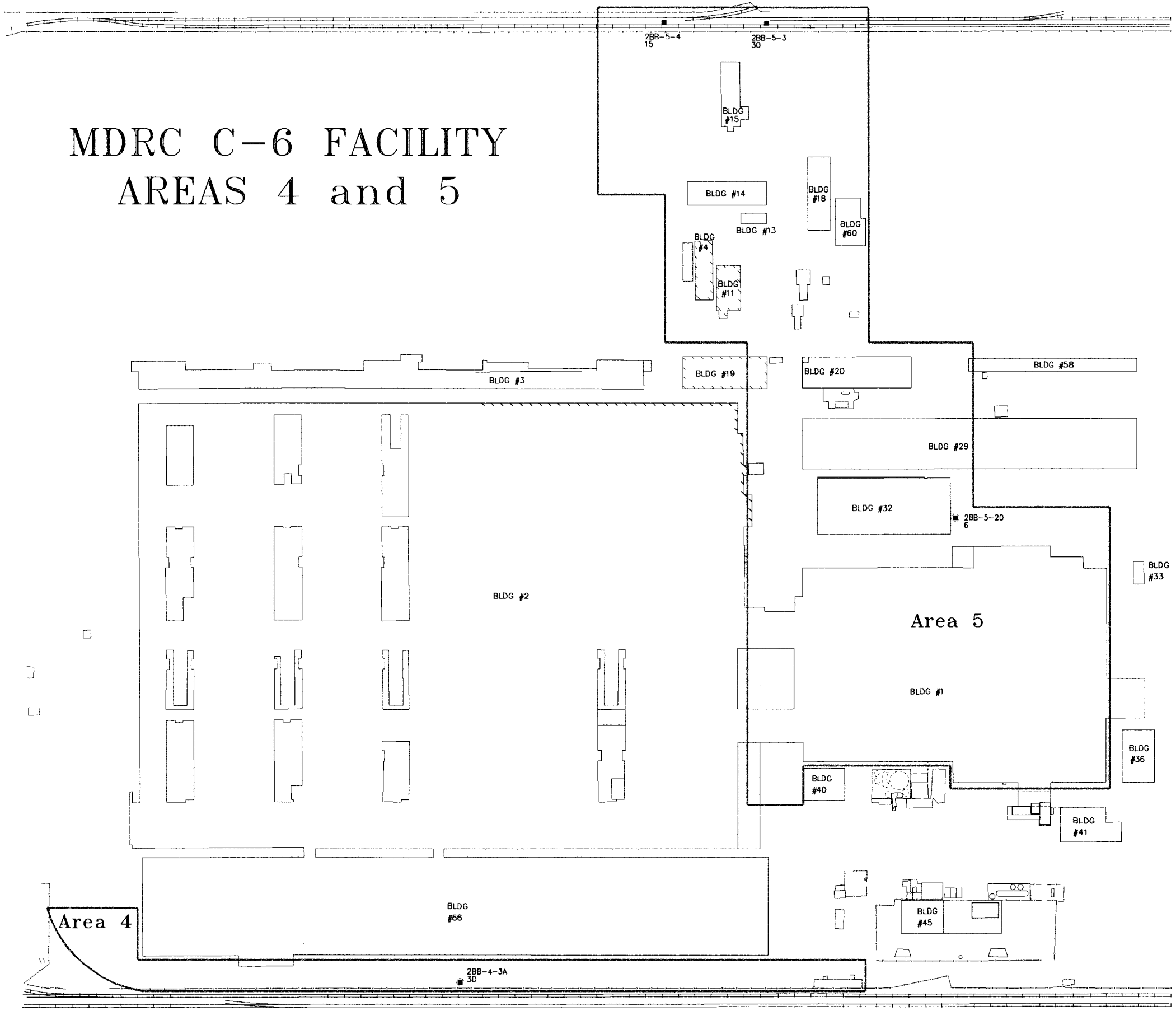
MDRC C-6 Facility
Los Angeles, California

Total Chromium Detections
25 & 30-Foot Samples

September 1997
K/J 974002.00

Figure 9E

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Total Chromium Concentration (mg/kg)	
	NOT DETECTED
	< 20
	21 – 50
	51 – 100
	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ⊗ 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

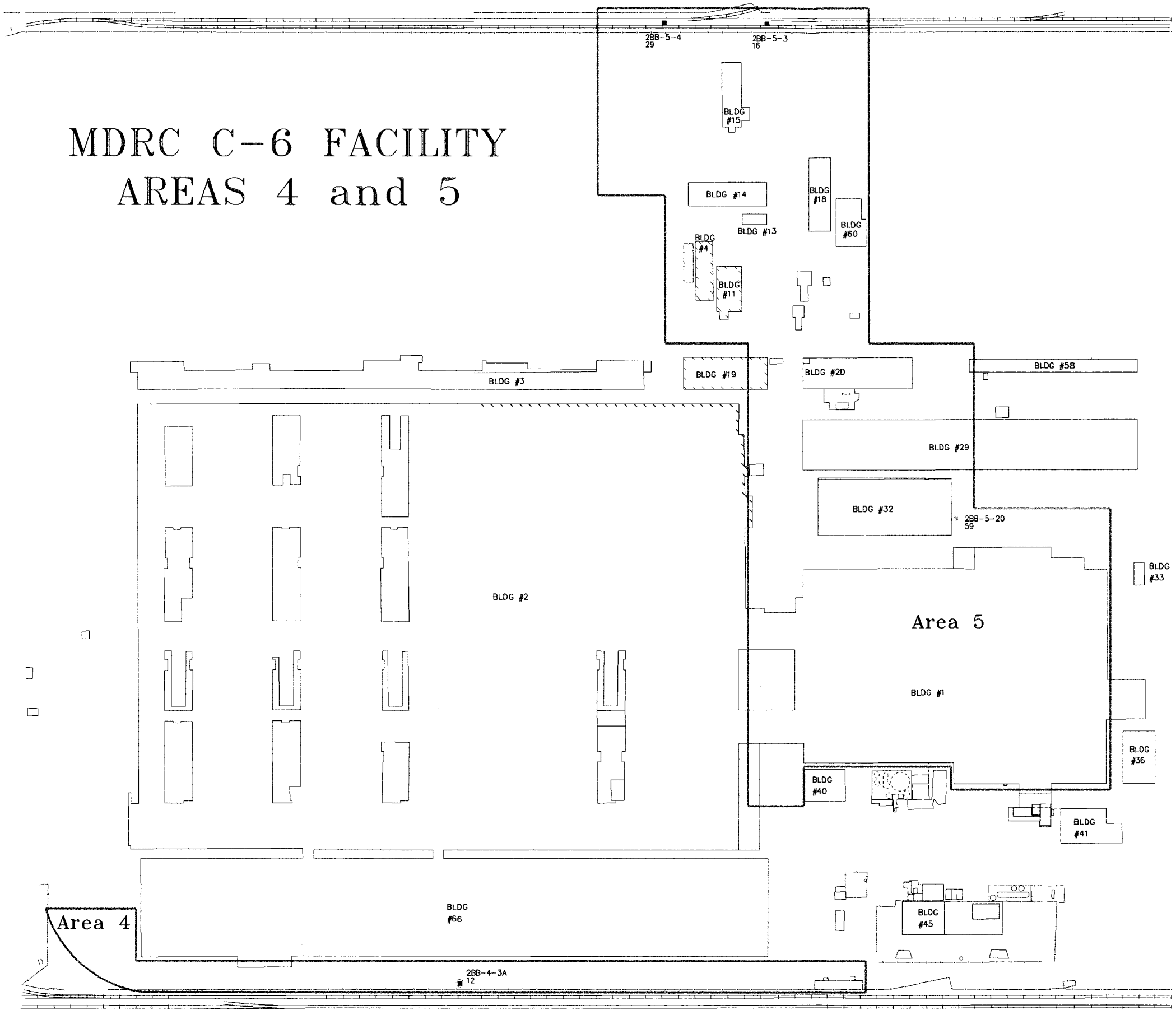
MDRC C-6 Facility
Los Angeles, California

Total Chromium Detections
40-Foot Samples

September 1997
K/J 974002.00

Figure 9F

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Total Chromium Concentration (mg/kg)	
■	NOT DETECTED
■	< 20
■	21 – 50
■	51 – 100
■	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

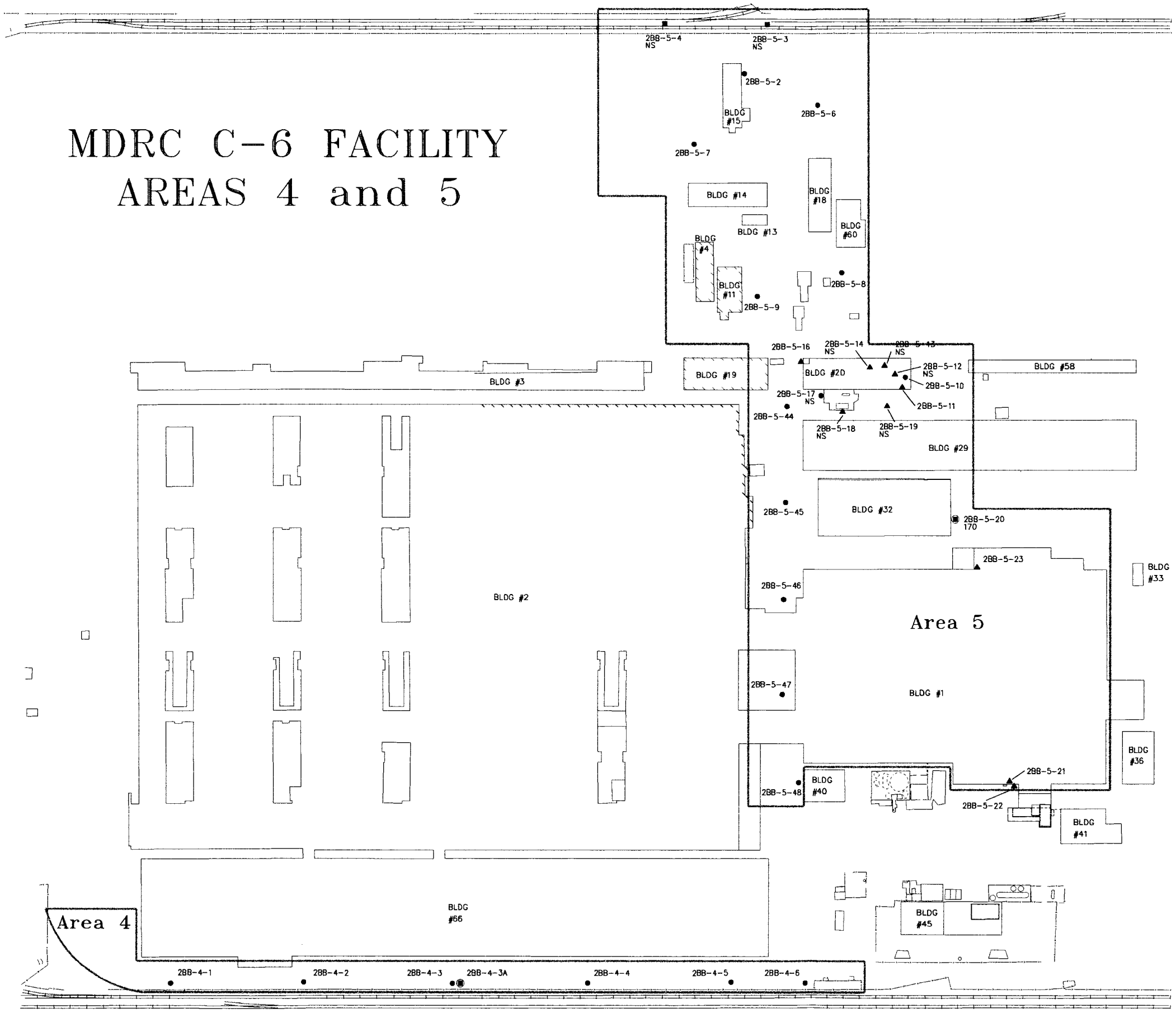
Total Chromium Detections
50-Foot Samples

September 1997
K/J 974002.00

Figure 9G

BOE-C6-0046537

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Arsenic Concentrations (mg/kg)	
	NOT DETECTED
	< 20
	21 – 50
	51 – 100
	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Arsenic was not detected in any samples deeper than 1 foot.

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

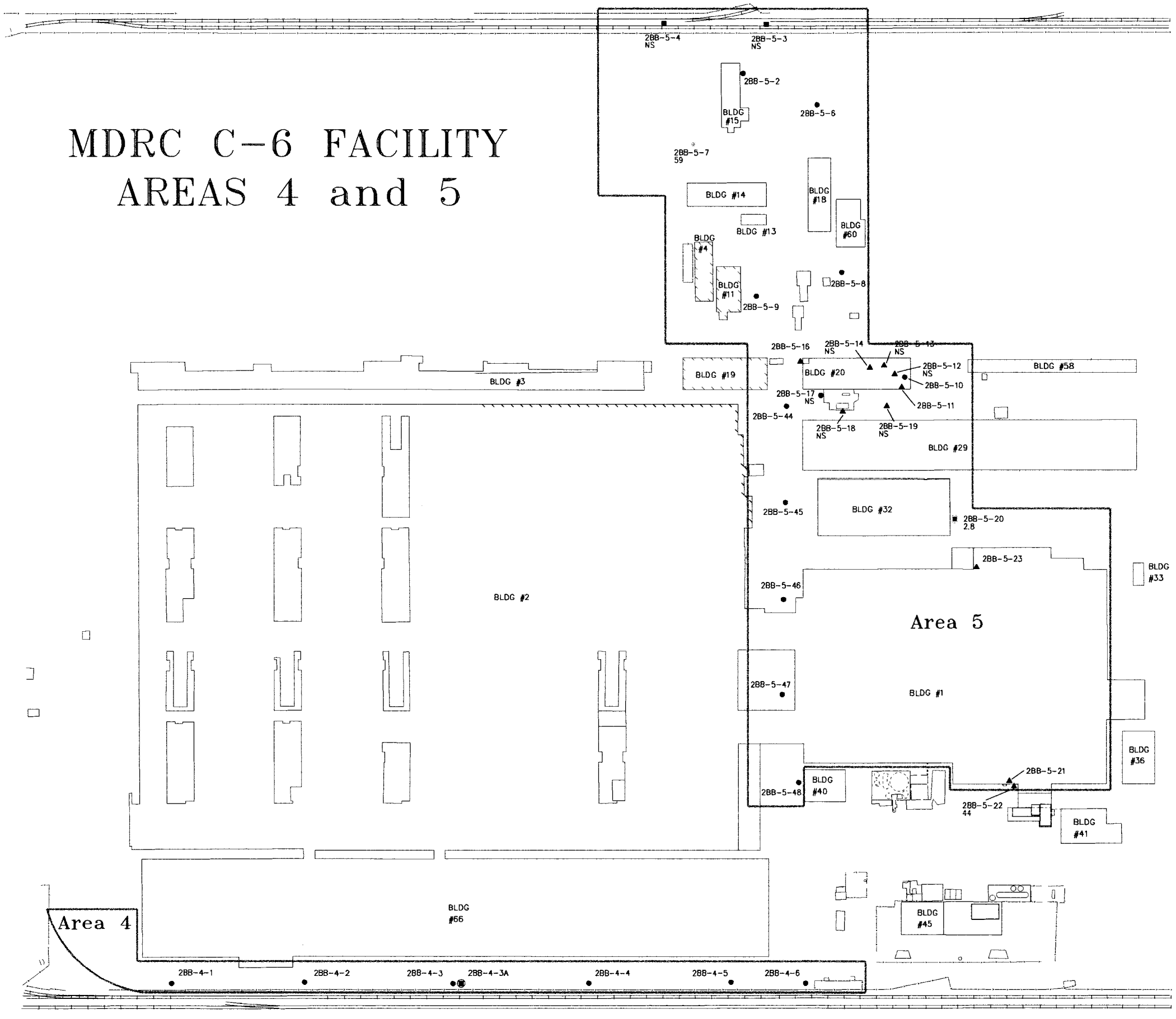
Arsenic Detections
1-Foot Samples

September 1997
K/J 974002.00

Figure 10A

BOE-C6-0046538

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Lead Concentrations (mg/kg)	
	NOT DETECTED
	< 20
	21 – 50
	51 – 100
	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

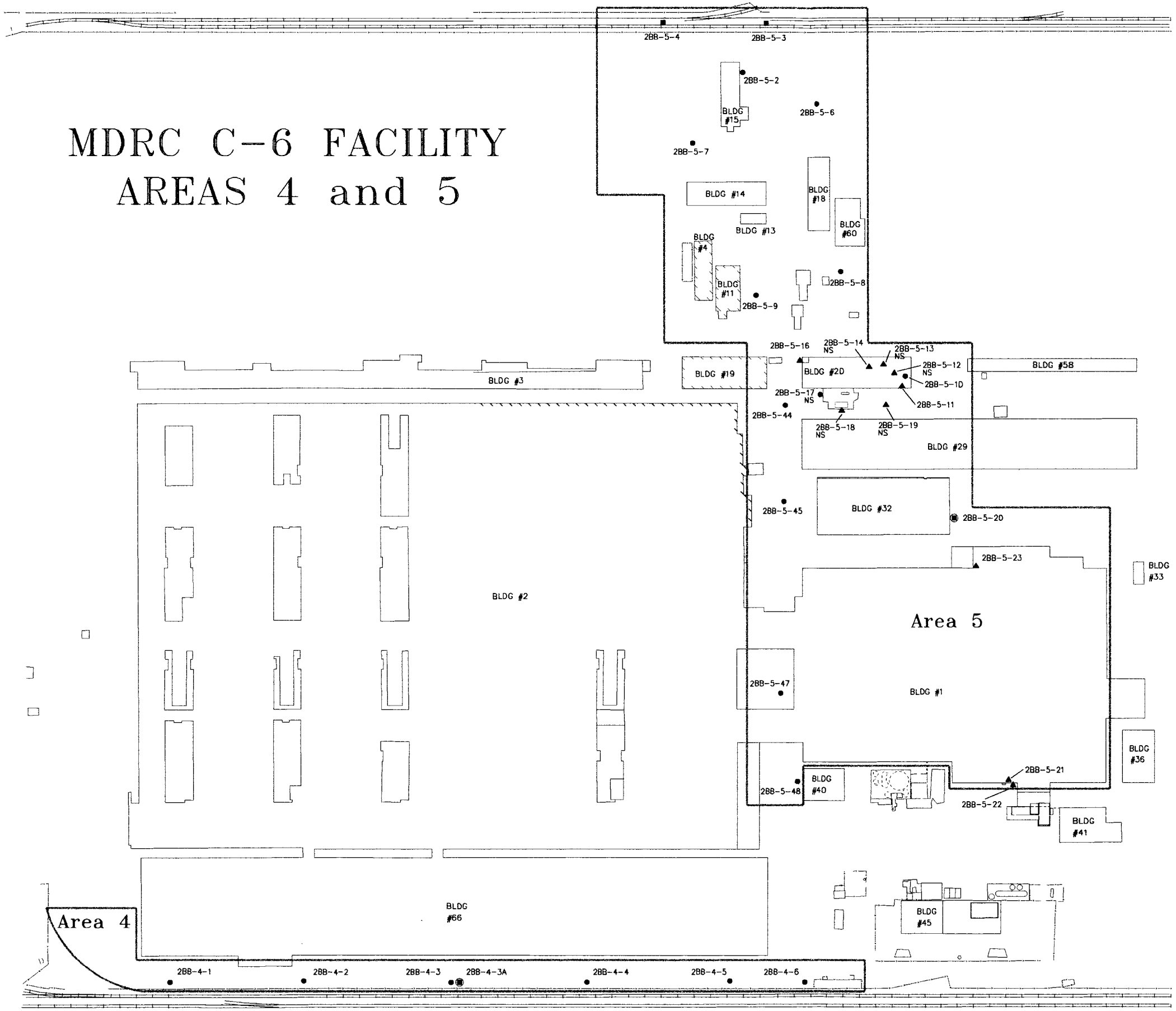
Lead Detections
1-Foot Samples

September 1997
K/J 974002.00

Figure 11A

BOE-C6-0046539

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Lead Concentrations (mg/kg)	
■	NOT DETECTED
■	< 20
■	21 – 50
■	51 – 100
■	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

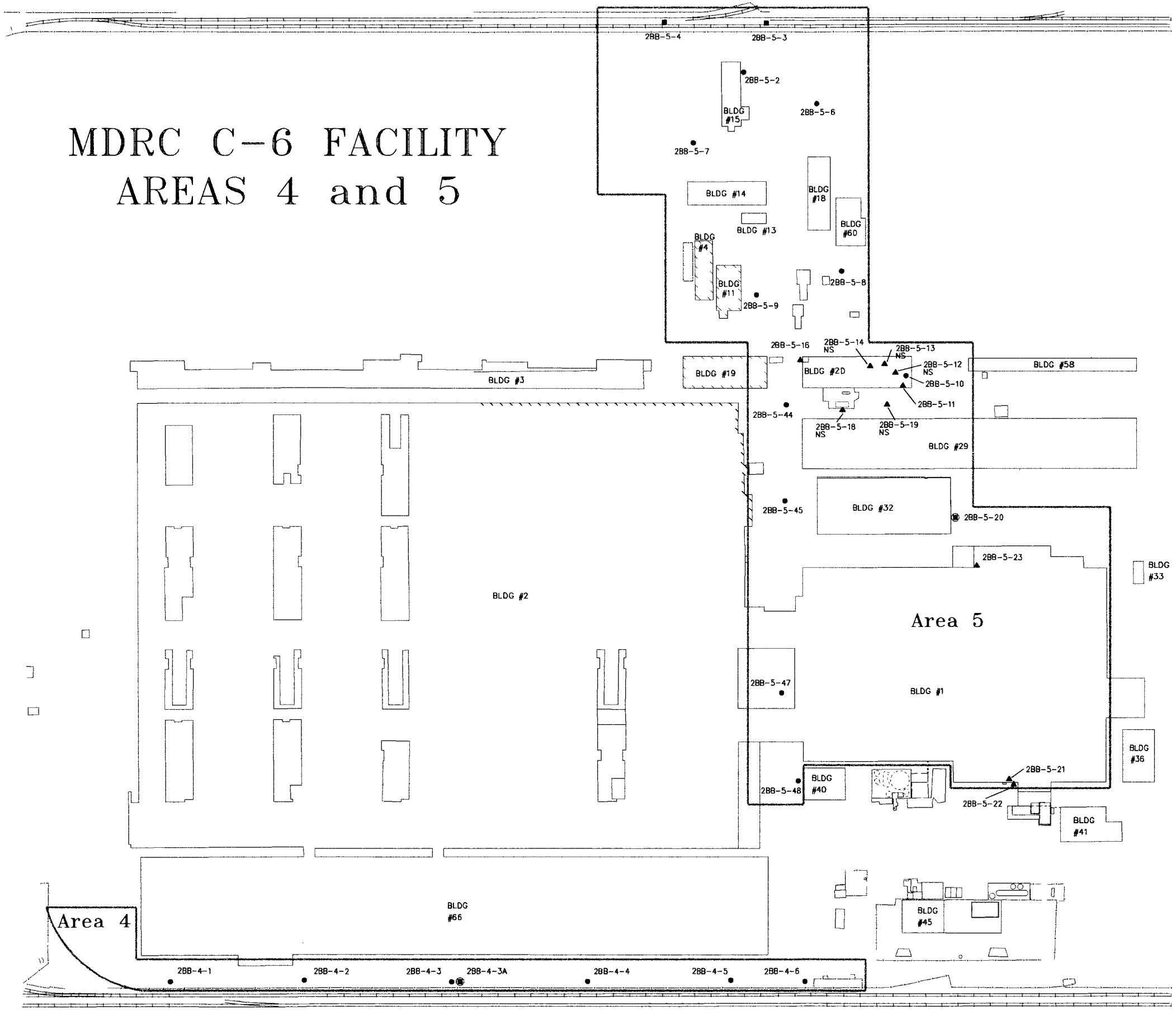
Lead Detections
4-Foot Samples

September 1997
K/J 974002.00

Figure 11B

BOE-C6-0046540

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Lead Concentrations (mg/kg)	
	NOT DETECTED
	< 20
	21 – 50
	51 – 100
	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ⊗ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

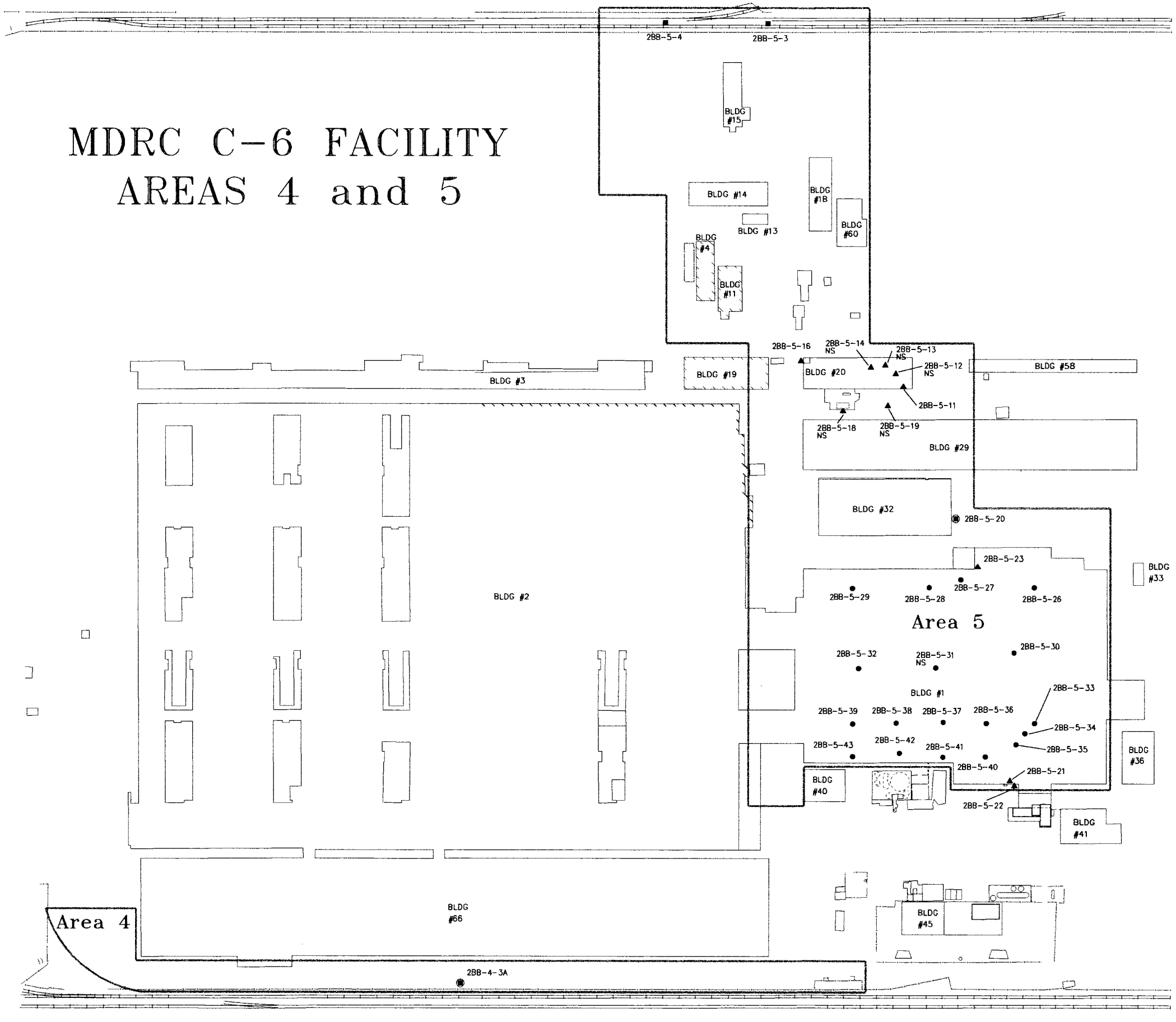
Lead Detections
10-Foot Samples

September 1997
K/J 974002.00

Figure 11C

BOE-C6-0046541

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Lead Concentrations (mg/kg)	
	NOT DETECTED
	< 20
	21 – 50
	51 – 100
	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

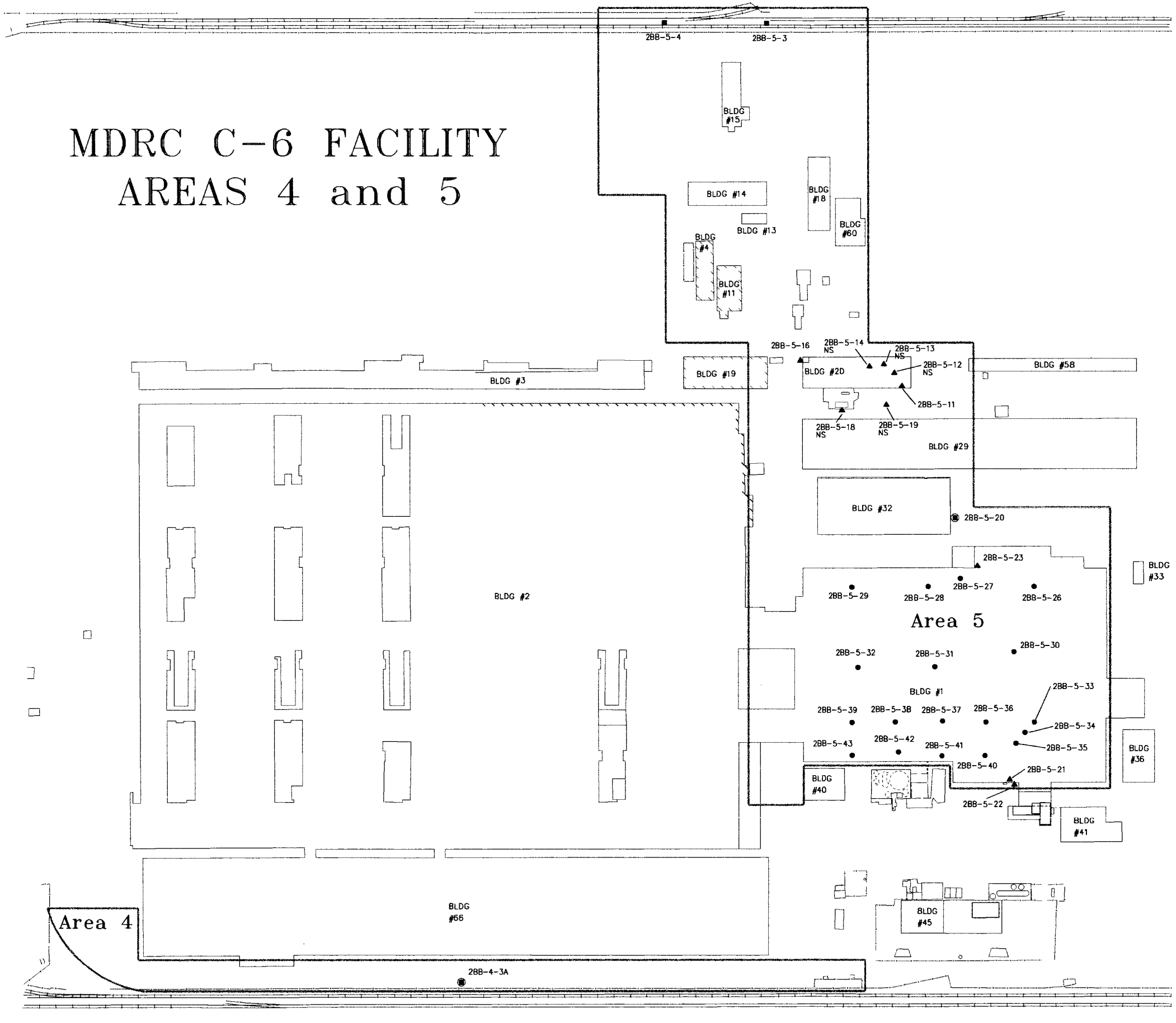
Lead Detections
15 & 20-Foot Samples

September 1997
K/J 974002.00

Figure 11D

BOE-C6-0046542

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Lead Concentrations (mg/kg)	
	NOT DETECTED
	< 20
	21 – 50
	51 – 100
	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◙ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

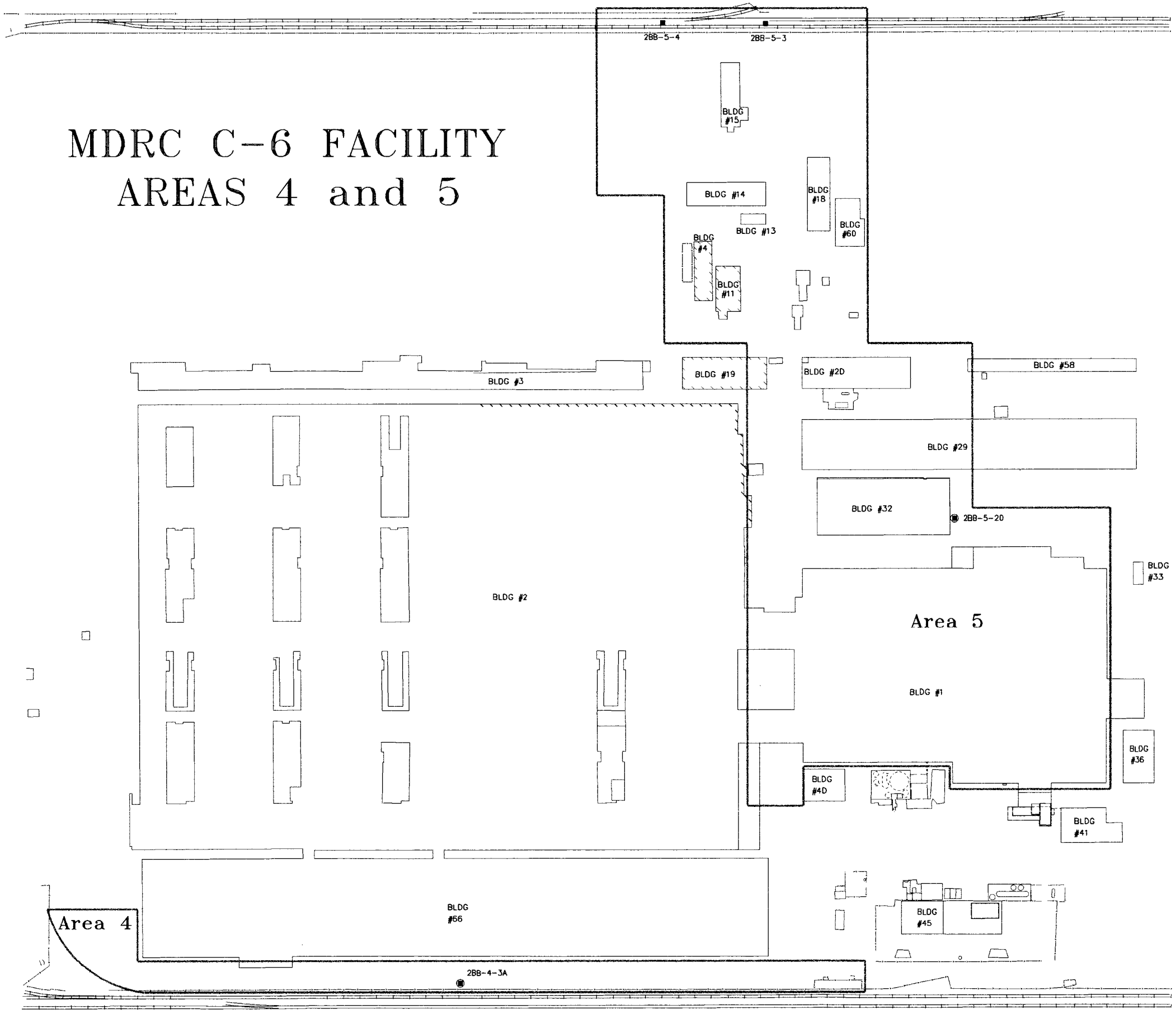
Lead Detections
25 & 30-Foot Samples

September 1997
K/J 974002.00

Figure 11E

BOE-C6-0046543

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Lead Concentrations (mg/kg)	
	NOT DETECTED
	< 20
	21 – 50
	51 – 100
	> 100
NS	NOT SAMPLED

Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD
- ■ 50 Foot TD
- ◉ 50 Foot Core Boring

0 100 200
Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

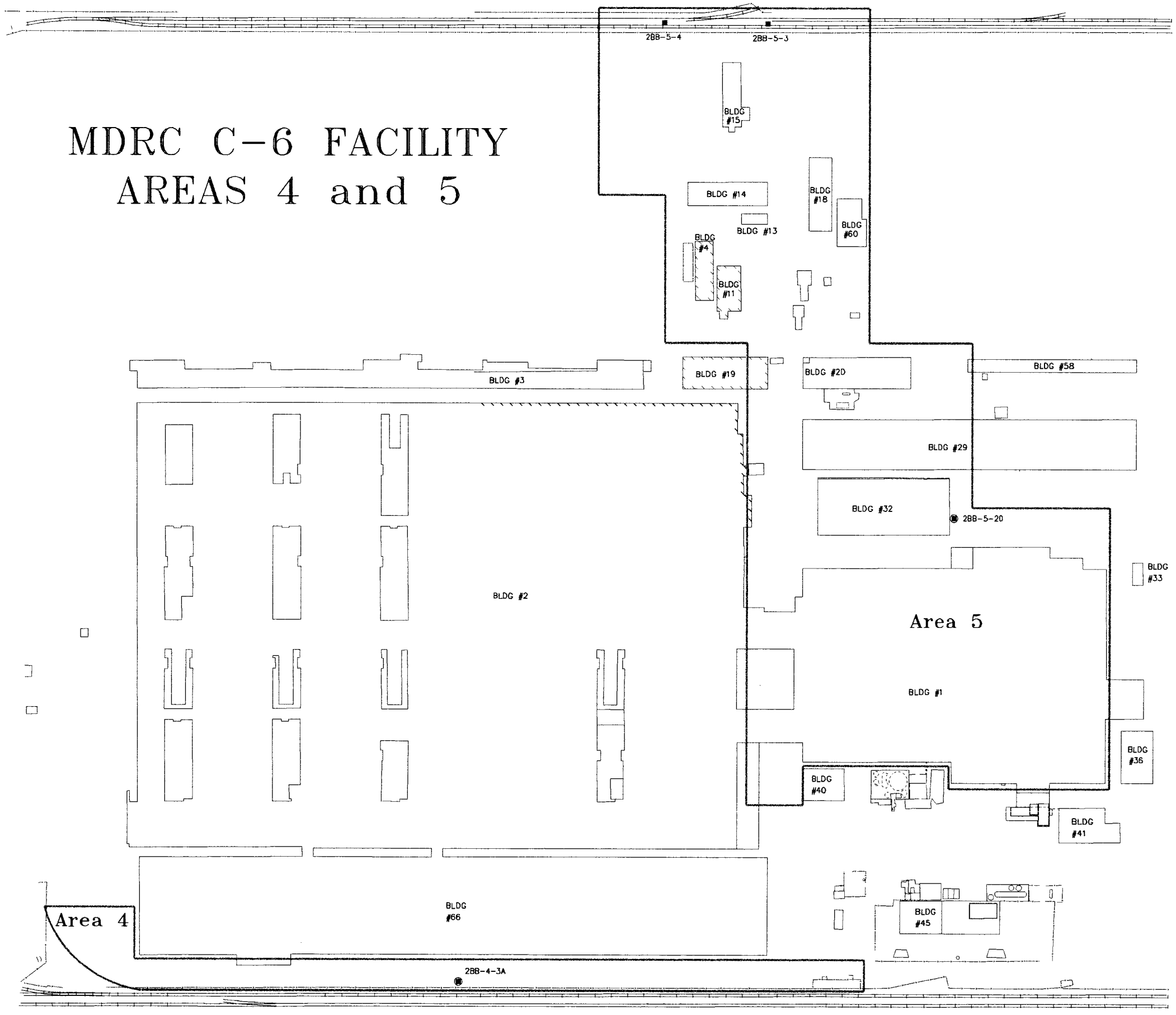
Lead Detections
40-Foot Samples

September 1997
K/J 974002.00

Figure 11F

BOE-C6-0046544

MDRC C-6 FACILITY
AREAS 4 and 5



LEGEND

Lead Concentrations (mg/kg)	
	NOT DETECTED
	< 20
	21 – 50
	51 – 100
	> 100
NS	NOT SAMPLED

Soil Borings

- 10 Foot TD
- 25 Foot TD
- 50 Foot TD
- 50 Foot Core Boring

0 100 200

Approximate Scale: 1"=200'

N

Kennedy/Jenks Consultants

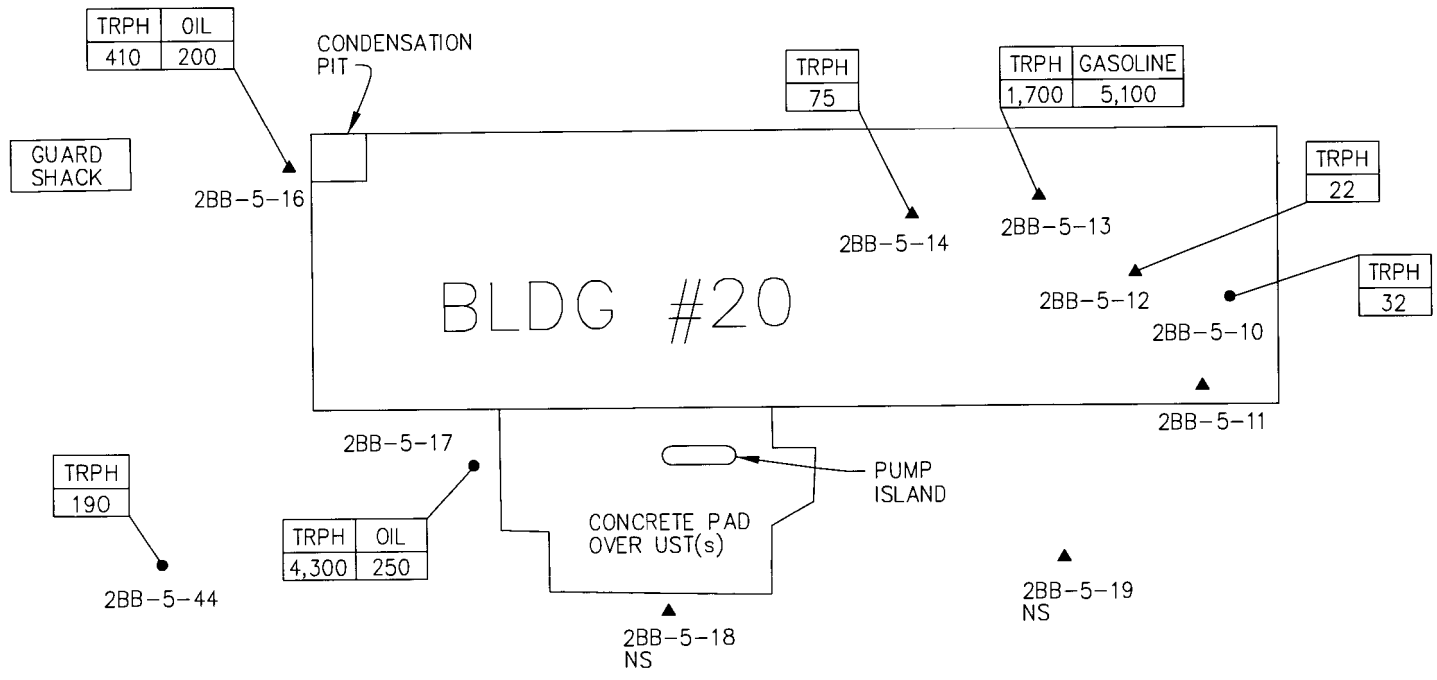
MDRC C-6 Facility
Los Angeles, California

Lead Detections
50-Foot Samples

September 1997
K/J 974002.00

Figure 11G

BOE-C6-0046545



Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD

TRPH = TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

NS = NOT SAMPLED

ALL CONCENTRATIONS ARE mg/kg

0 20 40

Approximate Scale: 1"=40'

N

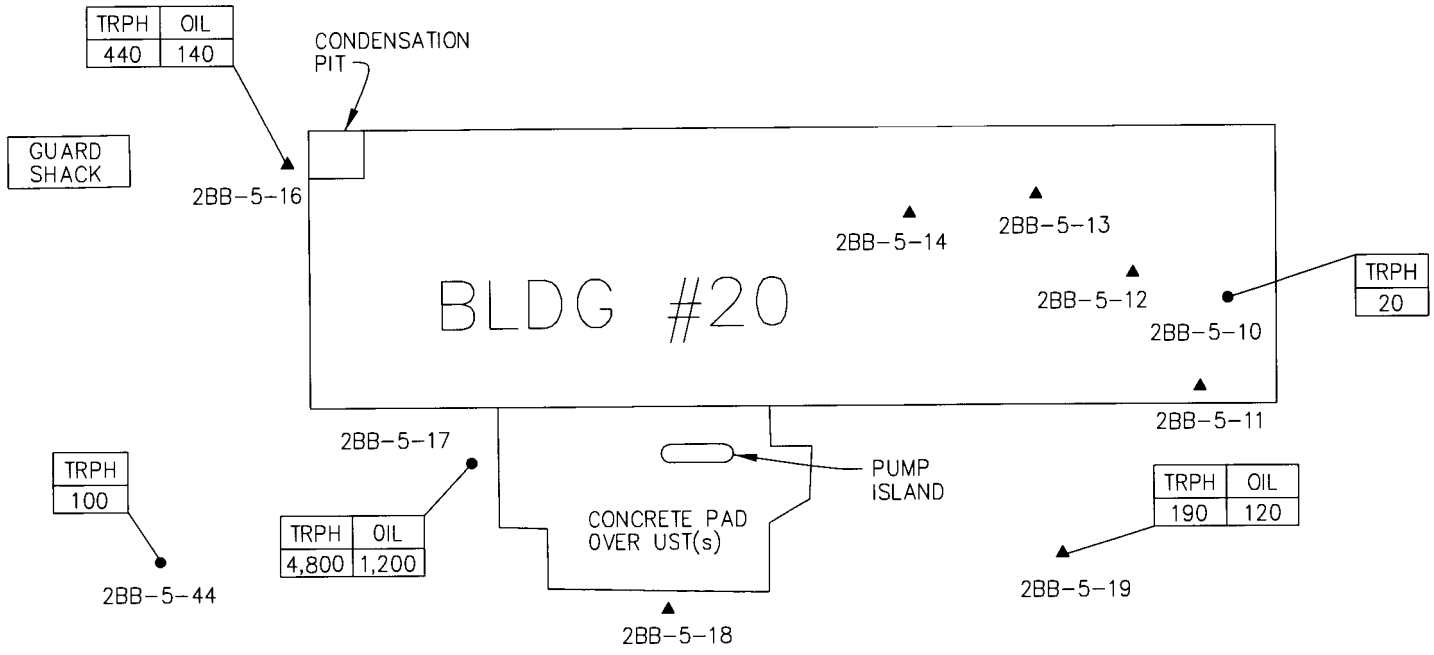
Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

Petroleum Hydrocarbon Detections
1-Foot Samples

September 1997
K/J 974002.00

Figure 12A



Soil Borings

- 10 Foot TD
- ▲ 25 Foot TD

TRPH = TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

NS = NOT SAMPLED

ALL CONCENTRATIONS ARE mg/kg

0 20 40

Approximate Scale: 1"=40'

N

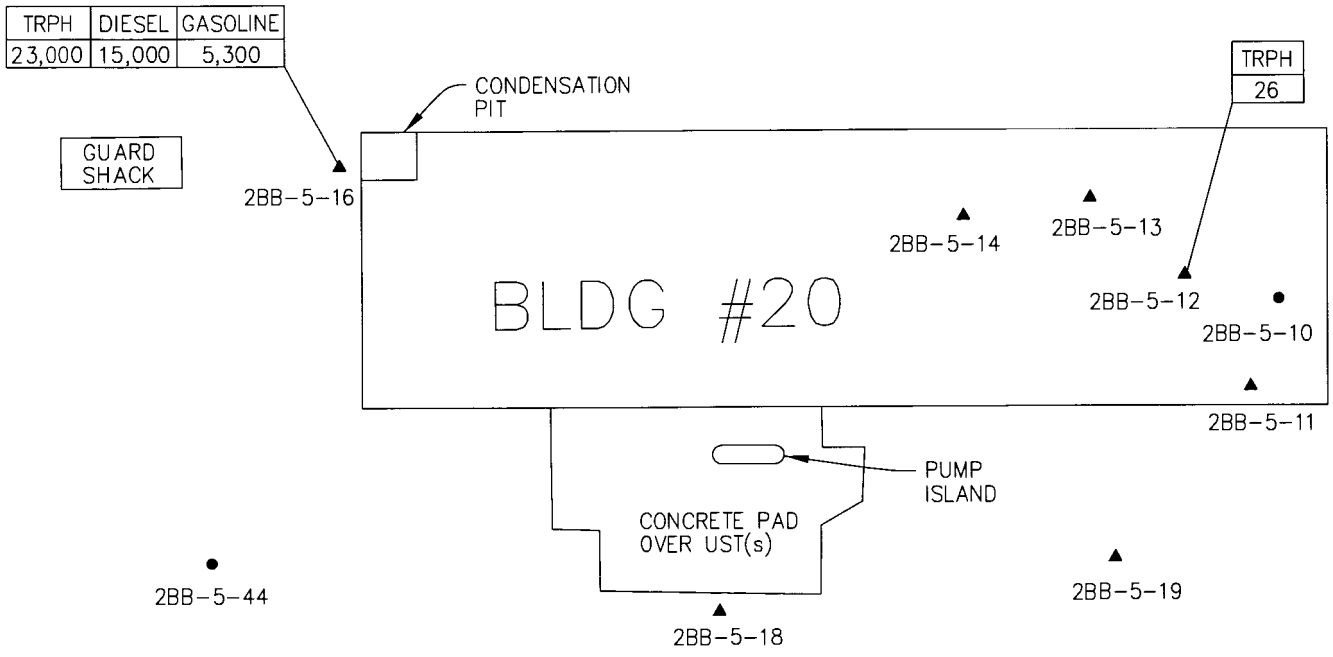
Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

Petroleum Hydrocarbon Detections
4-Foot Samples

September 1997
K/J 974002.00

Figure 12B



Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD

TRPH = TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

NS = NOT SAMPLED

ALL CONCENTRATIONS ARE mg/kg

0 20 40

Approximate Scale: 1"=40'

N

Kennedy/Jenks Consultants

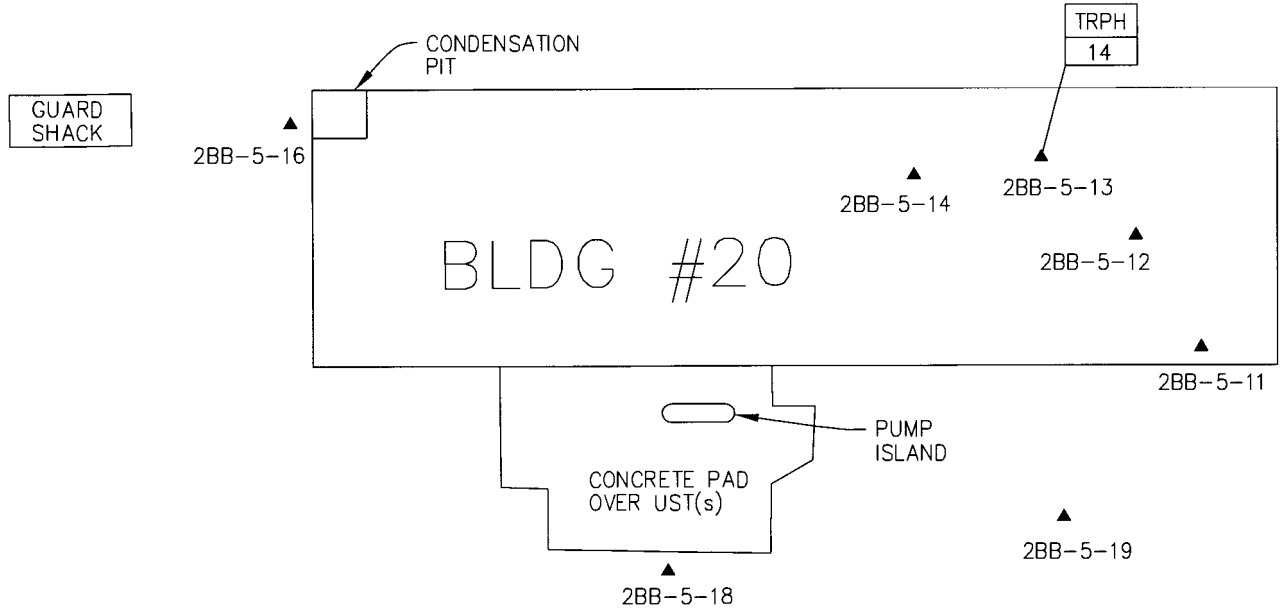
MDRC C-6 Facility
Los Angeles, California

Petroleum Hydrocarbon Detections
10-Foot Samples

September 1997
K/J 974002.00

Figure 12C

BOE-C6-0046548



Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD

TRPH = TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

NS = NOT SAMPLED

ALL CONCENTRATIONS ARE mg/kg

0 20 40

Approximate Scale: 1"=40'

N

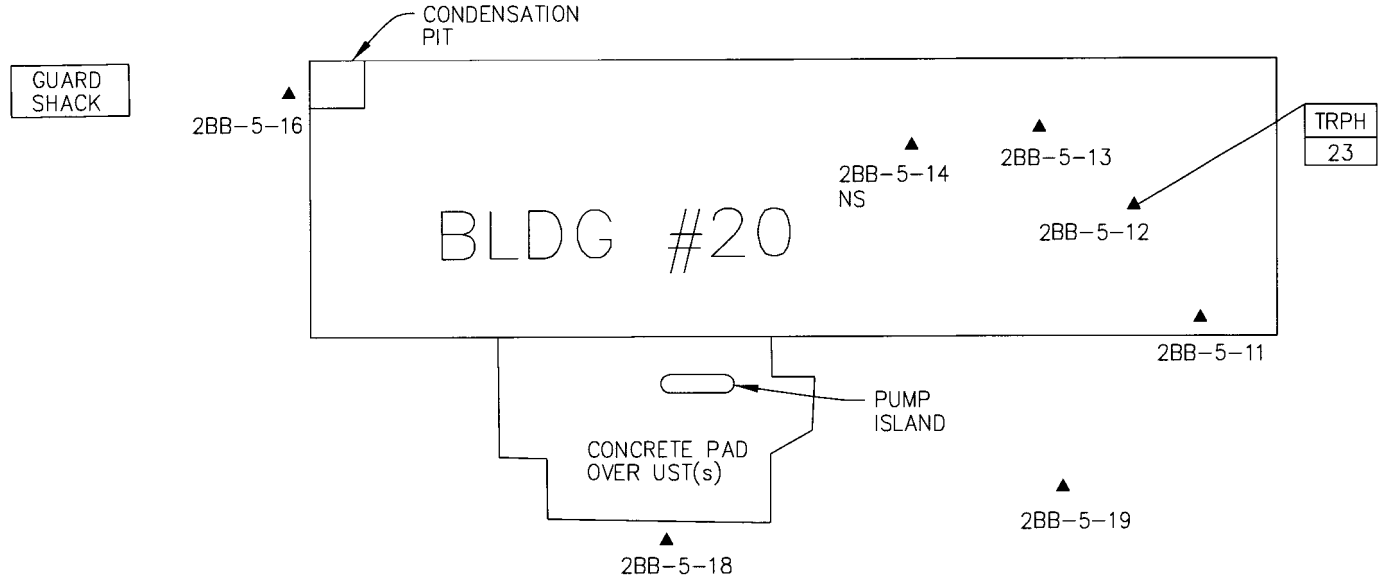
Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

Petroleum Hydrocarbon Detections
15-Foot Samples

September 1997
K/J 974002.00

Figure 12D



Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD

TRPH = TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

NS = NOT SAMPLED

ALL CONCENTRATIONS ARE mg/kg

0 20 40

Approximate Scale: 1"=40'

N

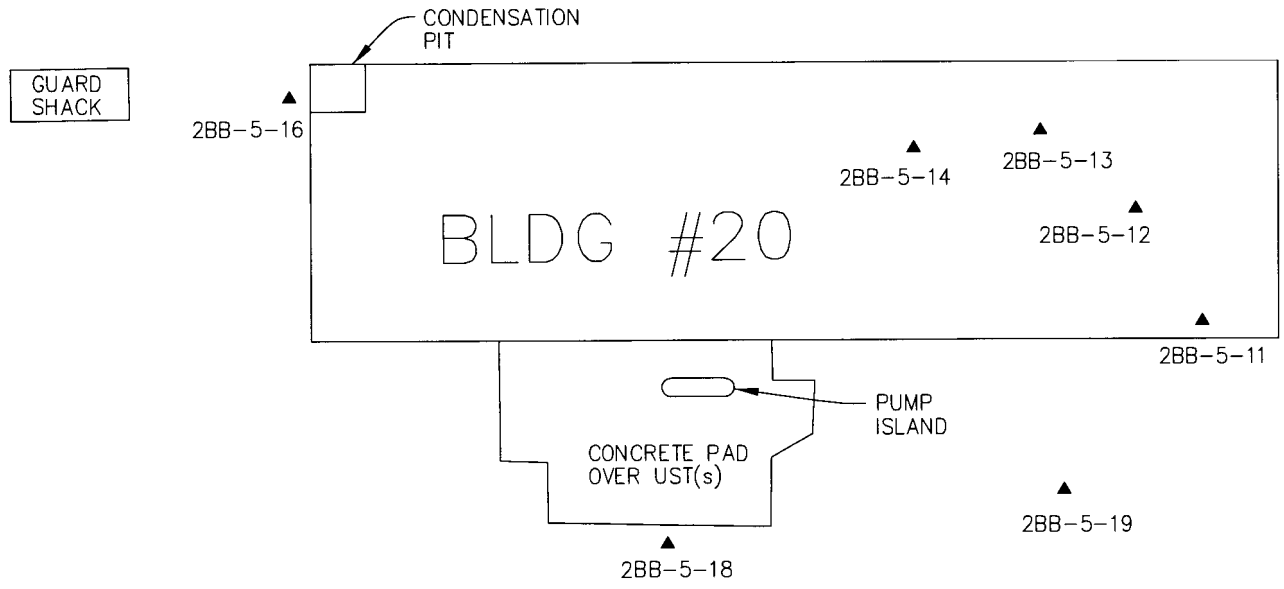
Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

Petroleum Hydrocarbon Detections
20-Foot Samples

September 1997
K/J 974002.00

Figure 12E



Soil Borings

- ● 10 Foot TD
- ▲ 25 Foot TD

TRPH = TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

NS = NOT SAMPLED

ALL CONCENTRATIONS ARE mg/kg

0 20 40

Approximate Scale: 1"=40'

N

Kennedy/Jenks Consultants

MDRC C-6 Facility
Los Angeles, California

Petroleum Hydrocarbon Detections
25-Foot Samples

September 1997
K/J 974002.00

Figure 12F

APPENDIX A
Boring Logs

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 4, East of Building 66		Boring Name: 2BB-4-1	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight		DATE STARTED: 4/16/97	DATE COMPLETED: 4/16/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
				1.7			ML	2.5Y 5/6	Asphalt, 4" Clayey SILT: light olive brown, stiff, slightly moist
				4.6				2.5Y 5/4	light olive brown, firm, moist
					5				stiff, moist
								2.5Y 4/4	olive brown, stiff, slightly moist
				3.1					some fine sand
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 4, East of Building 66		Boring Name: 2BB-4-2	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight		DATE STARTED: 4/16/97	DATE COMPLETED: 4/16/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Asphalt, 4"
■	■	■		2.1			ML	2.5Y 4/3	Clayey SILT: olive brown, firm, moist
■	■			2.4					
■	■	■			5			10YR 5/8	yellow brown, trace of fine sand, firm, slightly moist
■	■							10YR 4/4	dark yellow brown, stiff, slightly moist
■	■	■		2.2	10				
									Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 4, East of Building 66

DRILLING COMPANY: Quaternary Investigations

DRILLER: Joe Abreau

DRILLING METHOD (S): Earth Probe

DRILL BIT (S) SIZE: 1.5 inches

DEPTH TO WATER: Not Encountered

LOGGED BY: J. Knight

Boring Name: 2BB-4-3

Project Name: Douglas Aircraft

Project Number: 974002.00

ELEVATION: Not Surveyed

TOTAL DEPTH: 10 feet

DATE STARTED: 4/16/97

DATE COMPLETED: 4/16/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Asphalt, 4"
				1.7			ML	2.5Y 4/4	Sandy SILT: olive brown, fine sand, some clay, firm, moist
				1.3			ML	2.5Y 4/4	Clayey SILT: olive brown, stiff, slightly moist
					5			10YR 5/6	yellow brown, stiff, slightly moist
								2.5Y 5/6	light olive brown, stiff, slightly moist
				3.6	10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 4, East of Building 66	Boring Name: 2BB-4-3A
DRILLING COMPANY: Water Development / DRILLER: Paul Hanson	Project Name: Douglas Aircraft
DRILLING METHOD (S): CME-75, Hollow Stem Auger / DRILL BIT (S) SIZE: 7 3/4 inches	Project Number: 974002.00
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed / TOTAL DEPTH: 51.5 feet
LOGGED BY: J. Knight	DATE STARTED: 4/24/97 / DATE COMPLETED: 4/24/97

SAMPLES Driven	SAMPLES Recovered	SAMPLES Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
			4 6 10	6.2			ML	2.5Y 4/4	Asphalt, 6" Clayey SILT with Sand: olive brown, fine sand, stiff, moist
			5 7 10	12.1	5		CL	10YR 3/3	Silty CLAY: dark brown, very stiff, moist
			5 8 13	13.3	10		ML	2.5Y 5/4	Clayey SILT: light olive brown, some fine sand, stiff, slightly moist
			10 13 16	8.4	20		ML	2.5Y 4/4	Sandy SILT: olive brown, fine sand, very stiff, moist
			9 14 16	8.4	30				
			12 17 20	9.3	40		CL	2.5Y 6/2	Silty CLAY: light brown gray, very stiff, very moist

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 4, East of Building 66	Boring Name: 2BB-4-3A
DRILLING COMPANY: Water Development	DRILLER: Paul Hanson
DRILLING METHOD (S): CME-75, Hollow Stem Auger	DRILL BIT (S) SIZE: 7 3/4 inches
DEPTH TO WATER: Not Encountered	Project Name: Douglas Aircraft
LOGGED BY: J. Knight	Project Number: 974002.00
ELEVATION: Not Surveyed	TOTAL DEPTH: 51.5 feet
DATE STARTED: 4/24/97	DATE COMPLETED: 4/24/97

SAMPLES Driven	SAMPLES Recovered	SAMPLES Collected	SAMPLES Penetration Resistance (blows/foot)	SAMPLES Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					45		CL	2.5Y 6/2	Silty CLAY: light brown gray, very stiff, very moist
			15 21 27	8.7	50		ML	5Y 5/4	Sandy SILT: olive, fine sand, very stiff, moist
					55				Boring terminated at 51.5 feet.
					60				
					65				
					70				
					75				
					80				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 4, East of Building 66		Boring Name: 2BB-4-4	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight		DATE STARTED: 4/16/97	DATE COMPLETED: 4/16/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
				0.4			ML	10YR 4/6	Asphalt, 4" Clayey SILT: dark yellow brown, stiff, moist
				1.1				10YR 3/3	dark brown, firm, moist
					5			10YR 4/6	dark yellow brown, some fine sand, decreasing clay, stiff, slightly moist
							ML	10YR 4/6	Sandy SILT: dark yellow brown, fine sand, firm, moist
				2.4					some clay
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 4, East of Building 66		Boring Name: 2BB-4-5	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight		DATE STARTED: 4/16/97	DATE COMPLETED: 4/16/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
				0.4			ML	5Y 5/4	Asphalt, 4" Sandy SILT: olive, fine sand, firm, slightly moist
							ML	10YR 4/6	Clayey SILT: dark yellow brown, stiff, slightly moist
				0.3				10YR 3/4	dark yellow brown, firm, moist
					5			10YR 3/6	dark yellow brown, stiff, slightly moist
				0.9	10				hard, dry
									Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 4, East of Building 66		Boring Name: 2BB-4-6	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight		DATE STARTED: 4/16/97	DATE COMPLETED: 4/16/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
				0.8			ML	2.5Y 4/4	Asphalt, 4" Clayey SILT: olive brown, with fine sand, stiff, slightly moist
				2.7				10YR 3/4	dark yellow brown, little or no sand, firm, moist
					5				soft, moist
									stiff, slightly moist
				4.9				10YR 3/6	dark yellow brown, hard, slightly moist
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Photo Lab

DRILLING COMPANY: Quaternary Investigations

DRILLER: Joe Abreau

DRILLING METHOD (S): Earth Probe

DRILL BIT (S) SIZE: 1.5 inches

DEPTH TO WATER: Not Encountered

LOGGED BY: J. Knight

Boring Name: 2BB-5-2

Project Name: Douglas Aircraft

Project Number: 974002.00

ELEVATION: Not Surveyed

TOTAL DEPTH: 10 feet

DATE STARTED: 4/18/97

DATE COMPLETED: 4/18/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
				0.3			CL	10YR 2/1	Silty CLAY: black, stiff, moist, abundant organic material
				1.2				10YR 3/2	very dark gray brown
					5		ML	2.5Y 4/4	Clayey SILT: olive brown, stiff, slightly moist
				1.5					trace of fine sand
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Border with International Light Metals	Boring Name: 2BB-5-3
DRILLING COMPANY: Water Development / DRILLER: Gary Whitley	Project Name: Douglas Aircraft
DRILLING METHOD (S): CME-85, Hollow Stem Auger / DRILL BIT (S) SIZE: 8 inches	Project Number: 974002.00
EPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed / TOTAL DEPTH: 50.5 feet
LOGGED BY: D. Schneeberger	DATE STARTED: 4/22/97 / DATE COMPLETED: 4/22/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
			4 5 5						Asphalt Concrete, 3" ballast
			2 3 8	0	5		CL	2.5YR 2.5/2	CLAY: dark reddish brown, soft to medium stiff, damp, moderately plastic, trace of fine to medium sand
			3 4 6	0	10		SC	5YR 4/4	Clayey Fine SAND: reddish brown, medium stiff, damp, slightly plastic
			3 5 10	0	20		ML	2.5Y 4/3	Clayey SILT: olive brown, medium stiff to stiff, damp, slightly plastic, trace of fine sand
			6 14 16	0	30		SP	10YR 5/8	SAND: yellowish brown, medium dense, damp, fine, trace of shell fragments
			9 8 9	0	40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Border with International Light Metals

DRILLING COMPANY: Water Development

DRILLER: Gary Whitley

DRILLING METHOD (S): CME-85, Hollow Stem Auger

DRILL BIT (S) SIZE: 8 inches

DEPTH TO WATER: Not Encountered

LOGGED BY: D. Schneeberger

Boring Name: 2BB-5-3

Project Name: Douglas Aircraft

Project Number: 974002.00

ELEVATION: Not Surveyed

TOTAL DEPTH: 50.5 feet

DATE STARTED: 4/22/97

DATE COMPLETED: 4/22/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					45		SP	5YR 5/8	SAND (Continued): yellowish red, medium dense, damp, fine, trace of shell fragments
			6 14 22	0	50				
									Boring terminated at 50.5 feet.
					55				
					60				
					65				
					70				
					75				
					80				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Border with International Light Metals

Boring Name: 2BB-5-4

Project Name: Douglas Aircraft

Project Number: 974002.00

DRILLING COMPANY	DRILLER
Water Development	Gary Whitley
DRILLING METHOD (S)	DRILL BIT (S) SIZE
CME-85, Hollow Stem Auger	8 inches

DEPTH TO WATER	ELEVATION	TOTAL DEPTH
Not Encountered	Not Surveyed	50.5 feet
LOGGED BY	DATE STARTED	DATE COMPLETED
D. Schneeberger	4/22/97	4/22/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
			4 5 5						Asphalt Concrete, 3" ballast
			2 3 5	0	5		ML	10YR 4/3	Clayey SILT: brown, soft to medium stiff, damp, slightly plastic, trace of fine sand
			3 4 6	0	10				medium stiff
			4 5 10	0	20		SC	5YR 4/4	Clayey Fine SAND: reddish brown, medium stiff to stiff, moist, moderately to slightly plastic
			7 10 14	0	30		SP	5YR 5/8	SAND: yellowish red, medium dense, damp, fine, trace of medium, trace of shell fragments
			8 12 16	0	35				fine, trace of shell fragments
			7 9 14	0	40				increasing shell fragments

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Border with International Light Metals	Boring Name: 2BB-5-4
DRILLING COMPANY: Water Development	DRILLER: Gary Whitley — Project Name: Douglas Aircraft
DRILLING METHOD (S): CME-85, Hollow Stem Auger	DRILL BIT (S) SIZE: 8 inches — Project Number: 974002.00
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed — TOTAL DEPTH: 50.5 feet
LOGGED BY: D. Schneeberger	DATE STARTED: 4/22/97 — DATE COMPLETED: 4/22/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					45		SP	5YR 5/8	SAND (Continued): yellowish red, medium dense, damp, fine, some shell fragments
▨	▨	▨	7 13 19	0	50			2.5YR 6/3	light reddish brown, medium dense, damp to moist, fine
									Boring terminated at 50.5 feet.
					55				
					60				
					65				
					70				
					75				
					80				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5		Boring Name: 2BB-5-6	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight		DATE STARTED: 4/18/97	DATE COMPLETED: 4/18/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
■	■	■		1.5			CL	2.5Y 3/1	Silty CLAY: very dark gray, soft, moist, abundant organic material
■	■	■		2.9				2.5Y 5/4 2.5Y 3/3	mottled light and dark olive brown, stiff, slightly moist
					5			2.5Y 5/6	light olive brown, less organic
■	■	■		2.1			ML	2.5Y 6/4	Clayey SILT: light yellow brown, very stiff, slightly moist, trace of organic material
					10				decreasing clay
									Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5		Boring Name: 2BB-5-7	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight		DATE STARTED: 4/18/97	DATE COMPLETED: 4/18/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
				1.2			CL	2.5Y 3/3	Silty CLAY: dark olive brown, stiff, slightly moist, abundant organic material
				1.8					
					5			10YR 3/2 10YR 4/4	mottled very dark gray brown and dark yellow brown, trace of organic material
							ML	10YR 3/2 2.5Y 5/6	Clayey SILT: mottled very dark gray brown and light olive brown, stiff, slightly moist
				1.8				2.5Y 5/6	light olive brown, decreasing clay, some fine sand, stiff, slightly moist
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5		Boring Name: 2BB-5-8	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight		DATE STARTED: 4/21/97	DATE COMPLETED: 4/21/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Asphalt, 3"
				8.2			CL	2.5Y 3/1	Silty CLAY: very dark gray, firm, moist
				9.4					
					5		ML	10YR 3/3	Clayey SILT: dark brown, stiff, slightly moist
								10YR 3/3 2.5Y 5/6	mottled dark brown and light olive brown, firm, slightly moist
				9.1				2.5Y 4/4	decreasing clay, olive brown
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5	Boring Name: 2BB-5-9
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches
	Project Name: Douglas Aircraft
	Project Number: 974002.00
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed
	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight	DATE STARTED: 4/21/97
	DATE COMPLETED: 4/21/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Asphalt, 3"
				4.9			CL	2.5Y 3/1	Silty CLAY: very dark gray, firm, moist
				6.6				2.5Y 4/3	olive brown, firm, moist
					5		ML	2.5Y 4/4	Clayey SILT: olive, stiff, moist
									decreasing clay, some fine sand
				6.1					decreasing sand
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Building 20	Boring Name: 2BB-5-10
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau
	Project Name: Douglas Aircraft
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches
	Project Number: 974002.00
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed
	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight	DATE STARTED: 4/23/97
	DATE COMPLETED: 4/23/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 1'
				2.8			ML	2.5Y 3/3	Clayey SILT: dark olive brown, firm, slightly moist
				4.0			CL	2.5Y 3/3	Silty CLAY: dark olive brown, stiff, slightly moist
					5			2.5Y 3/2	very dark gray brown
							ML	2.5Y 4/4	Clayey SILT: olive brown, very stiff, slightly moist
				3.9				2.5Y 5/4	light olive brown, decreasing clay
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Building 20

DRILLING COMPANY: Quaternary Investigations

DRILLER: Joe Abreau

DRILLING METHOD (S): Earth Probe

DRILL BIT (S) SIZE: 1.5 inches

DEPTH TO WATER: Not Encountered

LOGGED BY: J. Knight

Boring Name: 2BB-5-11

Project Name: Douglas Aircraft

Project Number: 974002.00

ELEVATION: Not Surveyed

TOTAL DEPTH: 26 feet

DATE STARTED: 4/22/97

DATE COMPLETED: 4/22/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Concrete, 1'
				14.6			ML	2.5Y 3/2	Clayey SILT: very dark gray brown, stiff, slightly moist
				16.0					soft, moist
					5				stiff, moist
							ML	2.5Y 4/4	Clayey SILT: olive brown, firm, moist
				12.7	10				stiff, slightly moist
					15		ML	2.5Y 4/4	Sandy SILT: olive brown, fine sand, stiff, moist
					20		ML	2.5Y 5/4	Clayey SILT: light olive brown, firm, moist
				12.7	25			2.5Y 5/3	light olive brown, stiff, slightly moist
					30				Boring terminated at 26 feet.
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Building 20	Boring Name: 2BB-5-12
DRILLING COMPANY: Precision Sampling	DRILLER: Stewart King
DRILLING METHOD (S): XD-1	DRILL BIT (S) SIZE: 2 3/8 inches
	Project Name: Douglas Aircraft
	Project Number: 974002.00
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed
	TOTAL DEPTH: 26 feet
LOGGED BY: D. Schneeberger	DATE STARTED: 5/6/97
	DATE COMPLETED: 5/6/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
				4.1					Concrete, 6"
							CL	5YR 3/2	Sandy CLAY: dark reddish brown, medium stif, moist to damp, moderately plastic, fine sand
				0	5				
							ML	5YR 5/4	Clayey SILT: reddish brown, medium stiff, damp, slightly plastic
				0	10				
							SM	2.5Y 4/4	Clayey Fine SAND: olive brown, medium stiff, damp, slightly plastic
				0	15				
							ML	2.5Y 5/3	Clayey SILT: light olive brown, soft to medium stiff, damp, slightly plastic, trace of fine sand
				0	20			2.5Y 4/3	olive brown, increasing clay
					25				
					30				Boring terminated at 26 feet.
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Building 20		Boring Name: 2BB-5-13	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 26 feet
LOGGED BY: J. Knight		DATE STARTED: 4/22/97	DATE COMPLETED: 4/22/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 1'
				28.9			CL	2.5Y 5/4	Silty CLAY: light olive brown, firm, moist, fuel odor
								2.5Y 3/2	very dark gray brown, firm, moist
				450					fuel odor
					5		ML	2.5Y 4/4 2.5Y 5/6	Clayey SILT: mottled olive brown and light olive brown, stiff, slightly moist, slight fuel odor
								2.5Y 5/4	light olive brown, fuel odor
				13.2	10				decreasing clay, very faint odor
					15			2.5Y 4/4	olive brown, some fine sand, stiff, slightly moist, no odor
				9.8	20				increasing clay, decreasing sand
					25		CL	2.5Y 4/4	Silty CLAY: olive brown, very stiff, slightly moist
									Boring terminated at 26 feet.
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Building 20		Boring Name: 2BB-5-14	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 26 feet
LOGGED BY: J. Knight		DATE STARTED: 4/22/97	DATE COMPLETED: 4/22/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Concrete, 1'
							ML	2.5Y 4/3	Clayey SILT: olive brown, stiff, slightly moist
							CL	10YR 3/2	Silty CLAY: very dark gray brown, stiff, slightly moist
					5		ML	2.5Y 6/4	Clayey SILT: light yellow brown, very stiff, slightly moist
								2.5Y 4/4	olive brown
				3.0	10				
				3.9	15				decreasing clay
				5.0	20				increasing clay, firm, slightly moist
				3.6	25				stiff, slightly moist
					30				Boring terminated at 26 feet.
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Building 20	Boring Name: 2BB-5-16
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches
Project Name: Douglas Aircraft	
Project Number: 974002.00	
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed
TOTAL DEPTH: 26 feet	
LOGGED BY: J. Knight	DATE STARTED: 4/23/97
DATE COMPLETED: 4/23/97	

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Asphalt, 4"
■	■	■		2.4			CL	2.5Y 3/2	Silty CLAY: very dark gray brown, firm, moist
■	■	■		3.5				2.5Y 3/2 2.5Y 4/4	mottled very dark gray brown and olive brown, firm, moist
					5		ML	2.5Y 4/3 5GY 4/1	Clayey SILT: olive brown, soft, moist dark greenish gray, strong fuel odor, oily, soft, moist
■	■	■		50					
■	■	■		83	10				strong fuel odor, firm, moist
■	■	■		3.0	15			2.5Y 4/4	olive brown, stiff, slightly moist, no odor
■	■	■		2.5	20			2.5Y 5/4	light olive brown, stiff, moist
■	■	■		12.8	25		SM	2.5Y 5/6	Silty SAND: light olive brown, fine, loose, slightly moist
					30				Boring terminated at 26 feet.
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Building 20		Boring Name: 2BB-5-17	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
RILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 4 feet
LOGGED BY: J. Knight		DATE STARTED: 4/21/97	DATE COMPLETED: 4/21/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
				8.0			CL	5Y 4/2	Asphalt, 4"
				9.0					Silty CLAY with Sand: olive gray (discolored), fine to medium sand, firm, moist, weak fuel odor
					5				Boring terminated at 4 feet due to refusal.
					10				
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Building 20	Boring Name: 2BB-5-18
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches
	Project Name: Douglas Aircraft
	Project Number: 974002.00
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed
LOGGED BY: J. Knight	TOTAL DEPTH: 26 feet
	DATE STARTED: 4/21/97
	DATE COMPLETED: 4/21/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Concrete, 6"
									fill gravel
					5		ML	10YR 3/3	Clayey SILT: dark brown, firm, moist
								2.5Y 5/4	light olive brown, very stiff, slightly moist
				5.7	10				decreasing clay, stiff, slightly moist
					15			2.5Y 4/4	olive brown, some fine sand
				13.2	20				
				17.3	25			2.5Y 5/4	light olive brown, increasing clay, very stiff, slightly moist
									Boring terminated at 26 feet.
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Building 20	Boring Name: 2BB-5-19
DRILLING COMPANY: Quaternary Investigations	Project Name: Douglas Aircraft
DRILLER: Joe Abreau	Project Number: 974002.00
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches
:PTH TO WATER: Not Encountered	ELEVATION: Not Surveyed
	TOTAL DEPTH: 26 feet
LOGGED BY: J. Knight	DATE STARTED: 4/22/97
	DATE COMPLETED: 4/22/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Asphalt, 4"
									fill
				13.0			CL	10YR 3/2	Silty CLAY: very dark gray brown, firm, moist, slight oil odor
					5		ML	2.5Y 4/3	Clayey SILT: olive brown, stiff, slightly moist
									very stiff
				15.4	10				decreasing clay
				13.4	15			2.5Y 5/4	light olive brown, firm, moist
				11.4	20			5Y 4/3	olive, firm, moist
				13.2	25			2.5Y 4/4	olive brown, increasing clay, stiff, slightly moist
									Boring terminated at 26 feet.
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, North of Building 32	Boring Name: 2BB-5-20
DRILLING COMPANY: Water Development	DRILLER: Gary Whitley
DRILLING METHOD (S): CME-85, Hollow Stem Auger	DRILL BIT (S) SIZE: 8 inches
	Project Name: Douglas Aircraft
	Project Number: 974002.00
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed
	TOTAL DEPTH: 50.5 feet
LOGGED BY: D. Schneeberger	DATE STARTED: 4/17/97
	DATE COMPLETED: 4/17/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 6"
■	■	■	4 10 13	14.5			SC	5YR 5/6	Clayey SAND: yellowish red, medium dense, damp, medium to coarse, trace of gravel
■	■	■	2 3 11	14.5	5		ML	5YR 4/4	Clayey SILT: reddish brown, stiff, damp, medium plasticity
■	■	■	4 7 15	10.4	10		SC	5YR 4/4	Clayey Fine SAND: reddish brown, very stiff, damp, slightly to moderately plastic
■	■	■	5 6 9	10.4	20				
■	■	■	3 9 15	10.4	30		SP	2.5Y 5/6	SAND: light olive brown, medium dense, damp, fine
■	■	■	9 13 18	6.2	40		SC	5YR 5/6	Clayey SAND: yellowish red, dense, damp, fine to coarse, trace of clay

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, North of Building 32

DRILLING COMPANY: Water Development

DRILLER: Gary Whitley

DRILLING METHOD (S): CME-85, Hollow Stem Auger

DRILL BIT (S) SIZE: 8 inches

DEPTH TO WATER: Not Encountered

LOGGED BY: D. Schneeberger

Boring Name: 2BB-5-20

Project Name: Douglas Aircraft

Project Number: 974002.00

ELEVATION: Not Surveyed

TOTAL DEPTH: 50.5 feet

DATE STARTED: 4/17/97

DATE COMPLETED: 4/17/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					45		SC	5YR 5/6	Clayey SAND (Continued): yellowish red, dense, damp, fine to coarse, trace of clay
			3 6 12	6.2	50		ML	2.5Y 6/3	Clayey SILT: light yellowish brown, very stiff, damp, slightly plastic, trace of fine sand
									Boring terminated at 50.5 feet.
					55				
					60				
					65				
					70				
					75				
					80				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Painting Booth in Building 1		Boring Name: 2BB-5-21	
DRILLING COMPANY: Precision Sampling	DRILLER: Stewart King	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 25.5 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 5/7/97	DATE COMPLETED: 5/7/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 6"
				4.1			CL	5Y 4/2	Sandy CLAY: olive gray, medium stiff, moist, moderately plastic, trace of silt, fine sand
				12.4	5				
							ML	5YR 4/3	Clayey SILT: reddish brown, medium stiff, moist, slightly to non-plastic, trace of fine sand
				12.4	10				
				29.1	15				
							SC	5YR 4/3	Clayey Fine SAND: reddish brown, medium stiff, moist, slightly plastic
				162.4	20		ML	5YR 4/3	Clayey SILT: reddish brown, medium stiff, moist, slightly plastic
							SC	5YR 4/3	Clayey Fine SAND: reddish brown, medium stiff, moist, slightly plastic
				551	25				
					30				Boring terminated at 26 feet.
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Painting Booth in Building 1		Boring Name: 2BB-5-22	
DRILLING COMPANY: Precision Sampling	DRILLER: Stewart King	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 25.5 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 5/7/97	DATE COMPLETED: 5/7/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Concrete, 6"
				4.1			CL	5Y 4/2	Sandy CLAY: olive gray, medium stiff, moist, moderately plastic, trace of silt, fine sand
				12.4	5				
							ML	5YR 4/3	Clayey SILT: reddish brown, medium stiff, moist, slightly plastic, trace of fine sand
				12.4	10				
					15				
				29.1			SC	5YR 4/3	Clayey Fine SAND: reddish brown, medium stiff to stiff, moist, slightly plastic
							ML	5YR 4/3	Clayey SILT: reddish brown, medium stiff, moist, slightly plastic
				162.4	20				
							SC	5YR 4/3	Clayey Fine SAND: reddish brown, stiff, moist, slightly plastic
				551	25				
									Boring terminated at 25.5 feet.
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Dip Tank Area in Building 1	Boring Name: 2BB-5-23
DRILLING COMPANY: Precision Sampling / DRILLER: Sergio Navarro	Project Name: Douglas Aircraft
DRILLING METHOD (S): XD-I, Direct Push / DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed / TOTAL DEPTH: 25 feet
LOGGED BY: D. Schneeberger	DATE STARTED: 4/11/97 / DATE COMPLETED: 4/11/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 6"
				0			CL	5YR 3/2	Sandy CLAY: dark reddish brown, stiff, moist, moderately plastic, fine to medium
								5YR 4/4	reddish brown
				0	5				
				2.0	10				
				6.2			SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, soft to medium stiff, damp, slightly plastic
					15		ML	5YR 4/4	Clayey SILT: reddish brown, stiff, moist, slightly to moderately plastic, trace of fine to medium sand
				6.2	20				increasing clay, trace of fine sand
				10.4	25				Boring terminated at 25 feet.
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: **Area 5, Basement of Building 1**

DRILLING COMPANY: **Precision Sampling**

DRILLER: **Sergio Navarro**

DRILLING METHOD (S): **XD-I, Direct Push**

DRILL BIT (S) SIZE: **2 3/8 inches**

DEPTH TO WATER: **Not Encountered**

LOGGED BY: **D. Schneeberger**

Boring Name 2BB-5-26

Project Name Douglas Aircraft

Project Number 974002.00

ELEVATION: **Not Surveyed**

TOTAL DEPTH: **12 feet**

DATE STARTED: **4/8/97**

DATE COMPLETED: **4/8/97**

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 22"
				10.4			ML	5YR 4/4	Clayey SILT: reddish brown, medium stiff, dry, trace of fine sand
					5		SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, medium stiff to soft, dry to damp, slightly plastic
				22.9			ML	5YR 4/4	Clayey SILT: reddish brown, stiff, dry to damp, trace of fine to medium sand
				31.2	10				
									Boring terminated at 12 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1	Boring Name: 2BB-5-27
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches
	Project Name: Douglas Aircraft
	Project Number: 974002.00
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed
	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger	DATE STARTED: 4/9/97
	DATE COMPLETED: 4/9/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 22"
							ML	5YR 4/4	Clayey SILT: reddish brown, medium stiff, dry, trace of fine sand
				6.2	5				
									increasing in clay, slightly to moderately plastic
				10.4	10		SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, medium stiff, moist, slightly plastic
									Boring terminated at 12 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1		Boring Name: 2BB-5-28	
DRILLING COMPANY: Precision Sampling	DRILLER: Serglo Navarro	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
EPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 4/8/97	DATE COMPLETED: 4/8/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 22"
				10.4			ML	5YR 4/4	Clayey SILT: reddish brown, stiff, dry, trace of fine sand, slightly plastic
				6.2	5				
									increasing clay
				6.2	10				
									Boring terminated at 12 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1	Boring Name: 2BB-5-29
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches
	Project Name: Douglas Aircraft
	Project Number: 974002.00
EPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed
	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger	DATE STARTED: 4/8/97
	DATE COMPLETED: 4/8/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 22"
				10.4			ML	5YR 4/4	Clayey SILT: reddish brown, stiff, dry, trace of fine sand
				10.4	5		SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, medium stiff to soft, dry, slightly plastic
				6.2	10				
									Boring terminated at 12 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1		Boring Name: 2BB-5-30	
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 Inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 4/10/97	DATE COMPLETED: 4/10/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 22"
					5		ML	5YR 4/4	Clayey SILT: reddish brown, stiff, dry, slightly to non-plastic, trace of fine to medium sand
				64.5			SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, soft, dry, slightly plastic
					10		ML	5YR 4/4	Clayey SILT: reddish brown, stiff, moist, moderately plastic, trace of fine to medium sand
				27.0					
									Boring terminated at 12 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1		Boring Name: 2BB-5-31	
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 4/8/97	DATE COMPLETED: 4/8/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 22"
									rock in sampler
				18.7	5		ML	5YR 4/4	Clayey SILT: reddish brown, stiff, dry, trace of fine sand
									increasing clay
				18.7	10				
									Boring terminated at 12 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1		Boring Name: 2BB-5-32	
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 4/8/97	DATE COMPLETED: 4/8/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Concrete, 24"
				31.2	5		ML	5YR 4/4	Clayey SILT: reddish brown, very stiff, dry, trace of fine to medium sand
				22.9					
				27.0	10				
					15				Boring terminated at 12 feet.
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1		Boring Name: 2BB-5-33	
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 4/9/97	DATE COMPLETED: 4/9/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 24"
				52	5		ML	5YR 4/4	Clayey SILT: reddish brown, stiff to medium stiff, damp, slightly plastic, trace of fine sand
				147.9			SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, stiff, dry, slightly plastic
				381	10		ML	5YR 4/4	Clayey SILT: reddish brown, stiff, moist, slightly plastic, trace of fine to medium sand
					15				Boring terminated at 12 feet.
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1		Boring Name: 2BB-5-34	
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 4/9/97	DATE COMPLETED: 4/9/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 20"
				47.9			ML	5YR 3/3	Clayey SILT: dark reddish brown, medium stiff, damp, slightly plastic, trace of fine to medium sand
					5			5YR 4/4	reddish brown
				177			SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, soft, damp to dry, slightly to non-plastic
				421	10		ML	5YR 4/4	Clayey SILT: reddish brown, stiff, moist, slightly plastic, trace of fine to medium sand
					15				Boring terminated at 12 feet.
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1		Boring Name: 2BB-5-35	
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 4/9/97	DATE COMPLETED: 4/9/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 21"
				56.2	5		ML	5YR 3/3	Clayey SILT: dark reddish brown, medium stiff, damp to dry, slightly plastic, trace of fine to medium sand
								5YR 4/4	reddish brown, increasing silt
				152			SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, soft, damp, slightly to non-plastic
				135.4	10				
					15				Boring terminated at 12 feet.
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1		Boring Name: 2BB-5-36	
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 4/9/97	DATE COMPLETED: 4/9/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 21"
				72.5	5		ML	5YR4/4	Clayey SILT: reddish brown, medium stiff, damp, slightly plastic, trace of fine sand
				135.4			SC	2.5Y5/4	Clayey Fine SAND: light olive brown, soft to medium stiff, dry, slightly plastic
				347	10		ML	5YR4/4	Clayey SILT: reddish brown, medium stiff, moist, slightly to moderately plastic, trace of fine sand
					15				Boring terminated at 12 feet.
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1		Boring Name: 2BB-5-37	
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 10 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 4/10/97	DATE COMPLETED: 4/10/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
				14.5			ML	5YR 4/4	Concrete, 4" Clayey SILT: reddish brown, stiff, dry, slightly plastic, trace of fine sand
				22.4	5				
							SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, soft, dry, slightly to non-plastic
				68.4			ML	5YR 4/4	Clayey SILT: reddish brown, medium stiff, moist, moderately plastic, trace of fine to medium sand
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1	Boring Name: 2BB-5-38
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches
Project Name: Douglas Aircraft	Project Number: 974002.00
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed
TOTAL DEPTH: 12 feet	LOGGED BY: D. Schneeberger
DATE STARTED: 4/10/97	DATE COMPLETED: 4/10/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 20"
				14.5	5		ML	5YR 4/4	Clayey SILT: reddish brown, medium stiff, damp, slightly plastic, trace of fine sand
				14.5			SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, soft, dry
				14.5	10		ML	5YR 4/4	Clayey SILT: reddish brown, stiff, moist, moderately plastic, trace of fine sand
					15				Boring terminated at 12 feet.
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1	Boring Name: 2BB-5-39
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches
Project Name: Douglas Aircraft	
Project Number: 974002.00	
DEPTH TO WATER: Not Encountered	ELEVATION: Not Surveyed
TOTAL DEPTH: 12 feet	
LOGGED BY: D. Schneeberger	DATE STARTED: 4/9/97
DATE COMPLETED: 4/9/97	

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 20"
				10.4	5		ML	5YR 4/4	Clayey SILT: reddish brown, medium stiff, damp, slightly plastic, trace of fine sand
				22.9			SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, soft, dry
				31.0	10		ML	5YR 4/4	Clayey SILT: reddish brown, medium stiff, moist, moderately plastic, trace of fine sand
					15				Boring terminated at 12 feet.
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1	Boring Name: 2BB-5-40
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches
DEPTH TO WATER: Not Encountered	Project Name: Douglas Aircraft
LOGGED BY: D. Schneeberger	Project Number: 974002.00
ELEVATION: Not Surveyed	TOTAL DEPTH: 12 feet
DATE STARTED: 4/9/97	DATE COMPLETED: 4/9/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 20"
				43.7			ML	5YR 4/4	Clayey SILT: reddish brown, stiff, damp, slightly plastic, trace of fine sand
				85.4	5		SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, soft, dry, slightly to non-plastic
				189.5	10		ML	5YR 4/4	Clayey SILT: reddish brown, medium stiff, damp, slightly to moderately plastic, trace of fine to medium sand
					15				Boring terminated at 12 feet.
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1		Boring Name: 2BB-5-41	
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
EPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 4/9/97	DATE COMPLETED: 4/9/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 22"
				14.5			ML	5YR 4/4	Clayey SILT: reddish brown, medium stiff, damp, slightly plastic, trace of fine to mediumsand
					5				
				27.0			SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, soft, dry, slightly to non-plastic
							ML	5YR 4/4	Clayey SILT: reddish brown, stiff, moist, moderately plastic, trace of fine sand
					10				
				52					
									Boring terminated at 12 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1

DRILLING COMPANY: Precision Sampling

DRILLER: Sergio Navarro

DRILLING METHOD (S): XD-I, Direct Push

DRILL BIT (S) SIZE: 2 3/8 inches

TH TO WATER: Not Encountered

LOGGED BY: D. Schneeberger

Boring Name: 2BB-5-42

Project Name: Douglas Aircraft

Project Number: 974002.00

ELEVATION: Not Surveyed

TOTAL DEPTH: 12 feet

DATE STARTED: 4/9/97

DATE COMPLETED: 4/9/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 18"
				2.0			ML	5YR 4/4	Clayey SILT: reddish brown, stiff, dry, slightly plastic, trace of fine to medium sand
					5				
				6.2			SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, soft, dry, slightly to non-plastic
							ML	5YR 4/4	Clayey SILT: reddish brown, medium stiff, damp, moderately plastic, trace of fine sand
				10.4	10				
									Boring terminated at 12 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5, Basement of Building 1		Boring Name: 2BB-5-43	
DRILLING COMPANY: Precision Sampling	DRILLER: Sergio Navarro	Project Name: Douglas Aircraft	
DRILLING METHOD (S): XD-I, Direct Push	DRILL BIT (S) SIZE: 2 3/8 inches	Project Number: 974002.00	
:PTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 12 feet
LOGGED BY: D. Schneeberger		DATE STARTED: 4/9/97	DATE COMPLETED: 4/9/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Concrete, 20"
				6.2	5		ML	5YR 4/4	Clayey SILT: reddish brown, medium stiff, dry, slightly plastic, trace of fine sand
				14.5			SC	2.5Y 5/4	Clayey Fine SAND: light olive brown, soft, dry, slightly plastic
				22.9	10		ML	5YR 4/4	Clayey SILT: reddish brown, stiff, damp, moderately plastic, trace of fine to medium sand
					15				Boring terminated at 12 feet.
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5

DRILLING COMPANY: Quaternary Investigations

DRILLER: Joe Abreau

DRILLING METHOD (S): Earth Probe

DRILL BIT (S) SIZE: 1.5 inches

DEPTH TO WATER: Not Encountered

LOGGED BY: J. Knight

Boring Name: 2BB-5-44

Project Name: Douglas Aircraft

Project Number: 974002.00

ELEVATION: Not Surveyed

TOTAL DEPTH: 10 feet

DATE STARTED: 4/21/97

DATE COMPLETED: 4/21/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Asphalt, 8"
■	■	■		0.7			CL	10YR 2/1	Silty CLAY: black, stiff, slightly moist, with a 1-inch lense of dark yellow brown fine sand
■	■	■		1.5				10YR 3/2 10YR 4/6	mottled very dark gray brown and dark yellow brown, firm, moist
■	■				5		ML	2.5Y 5/6	Clayey SILT: light olive brown, stiff, slightly moist
■	■	■		1.2					decreasing clay, firm
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5

DRILLING COMPANY: Quaternary Investigations

DRILLER: Joe Abreau

DRILLING METHOD (S): Earth Probe

DRILL BIT (S) SIZE: 1.5 inches

DEPTH TO WATER: Not Encountered

LOGGED BY: J. Knight

Boring Name: 2BB-5-45

Project Name: Douglas Aircraft

Project Number: 974002.00

ELEVATION: Not Surveyed

TOTAL DEPTH: 10 feet

DATE STARTED: 4/21/97

DATE COMPLETED: 4/21/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
									Asphalt, 6"
				7.8			CL	10YR 3/3	Silty CLAY: dark brown, stiff, slightly moist
							ML	10YR 3/3 10YR 4/6	Clayey SILT: mottled dark brown and dark yellow brown, stiff, slightly moist
					5			2.5Y 5/4	light olive brown, firm, slightly moist
									stiff
				15.9					decreasing clay, some fine sand
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5		Boring Name: 2BB-5-46	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
DEPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 2 feet
LOGGED BY: J. Knight		DATE STARTED: 4/21/97	DATE COMPLETED: 4/21/97

SAMPLES: Driven	SAMPLES: Recovered	SAMPLES: Collected	SAMPLES: Penetration Resistance (blows/foot)	SAMPLES: Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
							CL	10YR 2/2	Asphalt, 6" Silty CLAY: very dark brown, firm, moist
									Boring terminated at 2 feet due to refusal.
					5				
					10				
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5		Boring Name: 2BB-5-47	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
ɛPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight		DATE STARTED: 4/21/97	DATE COMPLETED: 4/21/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Asphalt, 6"
				3.3			CL	10YR 4/3	Silty CLAY: brown, firm, moist
				3.0			ML	10YR 3/3	Clayey SILT: dark brown, firm, moist
					5			10YR 3/6	dark yellow brown, stiff, moist
									stiff, slightly moist
				2.8				2.5Y 4/4	olive brown, decreasing clay, very stiff, slightly moist
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Area 5		Boring Name: 2BB-5-48	
DRILLING COMPANY: Quaternary Investigations	DRILLER: Joe Abreau	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Earth Probe	DRILL BIT (S) SIZE: 1.5 inches	Project Number: 974002.00	
EPTH TO WATER: Not Encountered		ELEVATION: Not Surveyed	TOTAL DEPTH: 10 feet
LOGGED BY: J. Knight		DATE STARTED: 4/21/97	DATE COMPLETED: 4/21/97

SAMPLES: Driven	Recovered	Collected	Penetration Resistance (blows/foot)	Head Space Reading (ppm)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
					0				Asphalt, 6"
				2.9			CL	10YR 3/2	Silty CLAY: very dark gray brown, stiff, slightly moist
				3.1			ML	10YR 3/3	Clayey SILT: dark brown, firm, moist
					5			10YR 3/6	dark yellow brown, stiff, slightly moist
								10YR 4/6	dark yellow brown, very stiff, slightly moist
				3.9				2.5Y 5/6	light olive brown, decreasing clay
					10				Boring terminated at 10 feet.
					15				
					20				
					25				
					30				
					35				
					40				

APPENDIX C
Kennedy/Jenks Consultants' Standard Operating Guides

SOG-1

KENNEDY/JENKS CONSULTANTS
STANDARD OPERATING GUIDELINES

PERSONNEL DECONTAMINATION

INTRODUCTION

This guideline describes field procedures typically followed by Kennedy/Jenks Consultants for personnel decontamination. Decontamination of personnel is critical to health and safety during and after environmental fieldwork. It protects personnel from hazardous substances that can contaminate and eventually permeate protective clothing, respiratory equipment, tools, vehicles, and other equipment used onsite. Decontamination reduces exposure of site personnel to such substances by minimizing the transfer of harmful materials into clean areas and preventing the mixing of incompatible chemicals. It also protects the community by preventing uncontrolled transportation of contaminants from the site.

RECOMMENDED EQUIPMENT

The materials, equipment, and facilities described in the following list are not required in every case of personnel decontamination. However, they represent all that might be required for sites where maximum decontamination procedures are necessary.

- Drop cloths (plastic or other suitable material) on which heavily contaminated equipment and outer protective clothing can be deposited.
- Collection containers, such as drums or suitably lined trash cans, for storing disposable clothing, heavily contaminated personal protective clothing, or equipment that must be discarded.
- Lined box with absorbent for wiping or rinsing off gross contaminants and liquid contaminants.
- Large tubs to hold wash and rinse solutions; tubs should be at least large enough to hold a worker's booted foot and allow full access for washing.
- Non-phosphate wash solutions (e.g., Alconox, Liquinox) to wash off debris and chemicals and reduce hazards associated with any contaminants.

- Rinse solutions (e.g., potable or distilled water) to remove contaminants and contaminated wash solutions.
- Long-handled soft-bristled brushes to wash and rinse off contaminants.
- Paper or cloth towels for drying protective clothing and equipment.
- Lockers or containers for storage of decontaminated non-disposable clothing (e.g., hard hat, boots) and equipment.
- Department of Transportation (DOT)-approved containers for contaminated wash and rinse solutions.
- Plastic sheeting, sealed pads with drains, or other appropriate means of secondary containment of contaminated wash and rinse solutions that might be spilled during decontamination.
- Shower facilities for full body wash or, at a minimum, wash sinks available to personnel.
- Soap or wash solution, wash cloths, and towels for personnel.
- Lockers or containers for clean clothing and personal item storage.

LEVEL C DECONTAMINATION PROCEDURES

At a minimum, the following procedures apply when operating in a Level C exclusion zone:

1. Deposit items used onsite on plastic drop cloth. Segregation at the drop site reduces the probability of cross-contamination.
2. Scrub outer boots, gloves, and splash suit with decontamination solution or detergent water. Rinse items with generous amounts of water. Follow this step scrupulously for protective clothing that is not disposable.
3. Remove outer boots and gloves. Deposit or discard them in container with plastic liner.
4. To continue decontamination outside the exclusion zone, change canister or mask when leaving the zone. Upon re-entering, remember to gear up again.

5. Remove boots, chemical-resistant splash suit, and inner gloves and deposit them in separate containers lined with plastic.

6. Remove respirator by taking off facepiece. Avoid touching the face with the fingers. Deposit the facepiece on a plastic sheet.

7. As a field wash, clean hands and face thoroughly and shower as soon as possible. Wash respirator facepiece with respirator cleaning solution.

8. Ensure that all decontamination procedures are in accordance with the project sampling and analysis plan and Kennedy/Jenks Consultants Standard Operating Guideline, Investigation-Derived Residuals (Unit 9.0).

LEVEL D DECONTAMINATION PROCEDURES

If operating in a Level D area, perform the following procedures before leaving the site:

1. Wash and rinse all reusable equipment and garments. If gear is to be used elsewhere, wash it with detergent and then rinse with generous amounts of water.

2. If grossly contaminated, discard disposable protective clothing in appropriate container.

3. Wash hands and face thoroughly, and shower as soon as possible.

SPECIAL NOTES

When working in an exclusion zone, be sure that the decontamination area is placed in an upwind direction (plus or minus 20 degrees) from the site.

INVESTIGATION-DERIVED WASTES

Refer to the specific project sampling and analysis plan for details of disposition of investigation-derived wastes.

EMERGENCY DECONTAMINATION PROCEDURES

1. If the decontamination procedure is essential to the life saving process, decontamination must be performed immediately.

2. If a heat-related illness develops, protective clothing should be removed as soon as possible. Protective clothing and equipment should be washed, rinsed, and/or cut off.

3. If medical treatment is required to save a life, decontamination should be delayed until the victim is stabilized, or until decontamination will not interfere with medical treatment.

4. Dispose of contaminated clothing and equipment properly.

5. Alert medical personnel to the emergency.

6. Instruct medical personnel about potential contamination.

7. Instruct medical personnel about specific decontamination procedures.

REFERENCES

NIOSH/OSHA/USCG/EPA. 1985. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities. Washington, D.C. Federal Way).

U.S. Environmental Protection Agency. 1988. Standard Operating Safety Guidelines. United States Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC.

SOG-3

KENNEDY/JENKS CONSULTANTS
STANDARD OPERATING GUIDELINES

SAMPLE PACKAGING AND SHIPPING

INTRODUCTION

This standard operating guide presents methods for shipping non-hazardous materials, including most environmental samples, via UPS, Federal Express and Greyhound. Many local laboratories offer courier service as well.

EQUIPMENT

- Coolers
- Sorbent material
- Bubble-wrap
- Strapping tape
- Labels and pens
- Chain-of-Custody forms
- Chain-of-Custody seals
- UPS, Greyhound, or Federal Express manifests

Samples shipped to the Pacific Environmental Laboratory (PEL) in San Francisco (CA) can be shipped with the United Parcel Service (UPS) or Federal Express on a next-day basis unless other arrangements are agreed to. Greyhound should only be used if there is direct service (e.g. Sacramento or Bakersfield to San Francisco). Ordinary coolers without drain plugs or with sealed drain plugs similar to coolers used for refrigerating food while camping can normally be used to ship non-hazardous samples. Specific requirements for packaging materials only apply if the samples being shipped are known to be hazardous materials as defined in 49 CFR 171.8 (samples are not considered hazardous waste and therefore manifest requirements do not apply). UPS holds shippers responsible for damage occurring in the event of accidents when a hazardous material is shipped as a non-hazardous material. Samples which obviously are hazardous materials should therefore be shipped as such, and samples which most likely are not hazardous materials should be shipped in coolers. Guidelines for shipping hazardous materials by UPS are provided in the Guide for Shipping Hazardous Materials available from UPS.

Specific labels are used for shipments of hazardous materials which the Field Services Supervisor is responsible for providing.

Procedures further described below therefore pertain to samples being shipped as nonhazardous materials.

Absorbent pads should be placed in the bottom of the shipping container to absorb liquids in the event of the jar breakage. Liquid samples in glass jars should also be wrapped in plastic bubble wrap. Volatile organics analysis (VOA) vials should be packed in sponge holders. An equal weight of ice substitute should be used to keep the samples below 4 degrees centigrade for the duration of the shipment (up to 48 hours). Labels of samples may get wet (which is typical) and should be covered with clear tape. Strong tape should be used to tape the coolers closed. Transportation regulations and UPS guidelines require absorbent capacity of the material to equal the amount of liquid being shipped; each pad absorbs approximately 1 quart of liquid. Designated shipping to a coordinator who is responsible for all shipment of samples for your projects.

Chain-of-custody analysis request sample disposition forms must accompany shipments of samples to the PEL in San Francisco. This form must accompany shipments to laboratories, in addition to other requirements of the laboratories. The form is self explanatory; if you have questions talk to the sample custodian at PEL . Keep copies of all forms you send. The sample disposition section of the form requires us to specify whether unused portions of samples will be returned to the client, to us, or disposed of by the lab, in which case the lab assesses a $5 per sample disposal fee.

Samples should be preserved in accordance with requirements specified in the EPA requirements. Pay attention to where different kinds of acids and flammable are stored (e.g., nitric acid and nitrate compounds are not to be kept or shipped with hydrochloric acid and sulfuric acid).

DRAFT

SOG-11

KENNEDY/JENKS CONSULTANTS
STANDARD OPERATING GUIDELINE

BORING AND SUBSURFACE SOIL SAMPLING

INTRODUCTION

This guideline describes the equipment and procedures that are used by Kennedy/Jenks Consultants personnel for drilling and for collecting soil samples.

EQUIPMENT

- Drill rigs and associated drilling and sampling equipment as specified in workplan:
  - Hollow stem auger
  - Air-rotary casing hammer
  - Dual tube percussion hammer
  - Cable tool
  - Mud rotary
  - Reverse rotary
- CME, 5 ft x 94 mm continuous-core barrels (hollow-stem auger)
- 2.5-inch or 2.0-inch I.D. split-spoon drive sampler
- 2.5-inch or 2.0-inch brass liners and sealing materials (plastic end caps, Teflon seals, silicon tape, zip-lock plastic bags)
- Large capacity stainless steel borehole bailer
- Foxboro FID-Organic Vapor Analyzer (OVA)
- HNU PID-Organic Vapor Analyzer
- OVM
- Sampler cleaning equipment

  - Steamcleaner
  - Generator
  - Stiff-bristle brushes
  - Buckets
  - High purity phosphate-free liquid soap, such as Liquinox
  - Methanol (if necessary)
  - 0.1N nitric acid (if necessary)
  - Deionized water
  - Potable water

- Insulated sample storage and shipping containers

- Personal protective equipment (refer to project site safety plan)

TYPICAL PROCEDURE

1. Obtain applicable drilling and well construction permits prior to mobilization.

2. Clear drilling locations for underground utilities and structures by Underground Service Alert (USA) and subcontractors.

3. Have all downhole equipment steamcleaned prior to drilling each boring.

4. Ensure that soil borings not to be completed as monitoring wells are drilled with an auger drill rig, using hollow stem augers of appropriate size.

5. Make sure that borings not completed as monitoring wells are grouted to the surface, using a neat cement-bentonite grout (containing approximately 5 percent bentonite).

6. Ensure that borings made to construct shallow monitoring wells are drilled with an auger drill rig that uses hollow stem augers of appropriate size to provide an annular space of a minimum of 2 inches between borehole wall and well casing.

7. Verify that drill borings used to construct deeper monitoring wells are drilled with a dual tube percussion hammer or air-rotary casing hammer, using a steel drive casing of appropriate size, or with hollow stem augers through a steel conductor casing.

8. Collect soil samples for lithologic logging purposes with a CME continuous coring system in 5-foot increments.

9. Collect soil samples for lithologic logging and chemical and physical analyses by driving a split-spoon drive sampler, in 2.5-foot to 5-foot increments, below the depth of the auger bit with a rig-mounted hammer. Record the standard penetration resistance. If the sample is pushed rather than driven, be sure to record the push force.

10. When drilling with air-driven drill rigs, collect soil samples for lithologic logging purposes from the cyclone separator discharge on the dual tube percussion hammer, which separates air from formation cuttings as the drive casing is advanced.

11. Have the soils classified in the field in approximate accordance with the visual-manual procedure of the Unified Soil Classification System (ASTM D-2488-90) and the Munsell Color Classification.

12. Prior to each sampling event, wash the split-spoon drive sampler and brass liners with high purity phosphate-free soap, and double-rinse them with deionized water and methanol and/or 0.1N nitric acid, as appropriate.

13. At each sampling interval, collect soil in one brass liner for potential laboratory analysis. Cover this sample in Teflon sheets, seal it with plastic caps, and wrap it with silicon tape. Place a completed sample label on the brass liner. Then see that the samples are placed in appropriate containers and stored at approximately 4 °C.

14. As a field screening procedure (if applicable), at each sampling interval put the soil from one of the brass liners into an airtight container and allow it to equilibrate. After this, use an OVA to monitor the headspace in the container. If significant organic vapors are detected with the OVA, save the appropriate brass sample liners for potential laboratory analysis.

15. Complete chain of custody forms in the field and transport the samples in insulated containers, at an internal temperature of approximately 4 °C, to the selected laboratory.

16. If applicable, as described in the site safety plan, use an OVA to analyze in situ air samples from the breathing zone, the inside of the augers or casing, and other locations as necessary.

INSTALLATION AND TESTING OF ISOLATION CASING

1. Upon completion of the initial small-diameter boring, use a rotary drill bit of appropriate diameter to ream the boring to a depth (to be determined). Use a

bentonite mud mixture, in accordance with standard drilling practice, to maintain hole stability and to minimize infiltration and development of a mud cake on the borehole wall.

2. When reaming is completed, install isolation casing in the boring. Use conductor casing of an appropriate grade of 14-inch-diameter steel with a wall thickness of 0.25 inch, per the following specifications:

   a. Sections are 20, 10, or 5 feet in length.

   b. Casing sections are beveled or butt-jointed.

   c. Field joints are arc-welded with 70 percent weld penetration, having a minimum of two passes per circumference.

   d. Welding rod is compatible with casing material.

   e. Joints are watertight.

   f. Casing centralizers are set on the bottom, middle, and top of the total casing length. Centralizers are installed in sets of four, spaced at 90°, and attached at the bottom by a tack weld. They are flanged 2 inches at the top and bottom to contact the borehole wall.

3. Make volumetric calculations prior to grouting, to estimate the total volume of grout required to fill the annular space. The amount of grout actually used must be compared with this estimate. Ensure that the grout meets the following specifications:

   a. Volumes of grout used must be within 10 percent of estimated value.

   b. The grout consists of ASTM C150 Type II cement and water at a ratio of 5 gal. of water per 94 lb sack of cement, weighing approximately 118 lb per ft. Approximately 5 lb of powdered bentonite for each sack of cement is mixed into the grout.

   Note that leakage tests or a bond log might be required to validate the grout seal.

4. Grout conductor casing into place by one of the following methods:

   a. Pressure-grout from the bottom of the casing, using a packer or Braden-head to force the grout into the annular space between the conductor casing and the borehole wall.

   b. Fill the casing with grout and use a spacer plug apparatus to force the grout into the annular space between the conductor casing and the borehole wall. The spacer plug must be composed of a material that can be left in the boring and later drilled through to complete it.

5. After allowing the grout to set, continue drilling with an appropriate diameter hollow stem auger. A rotary bit can be used initially to drill through any grout that might have hardened in, or directly below, the casing.

EQUIPMENT CLEANING

1. Prior to drilling each boring, steamclean downhole equipment (augers, well casing, sampler).

2. Before collection of each drilling sample, steamclean or wash sampling equipment (sampler and brass liners) with a brush, in a solution of high purity phosphate-free soap and potable water. Rinse the equipment with potable water and methanol and/or 0.1N nitric acid, as appropriate. Follow this with double-rinsing using distilled water.

3. Before leaving the site at completion of drilling, steamclean downhole equipment and vehicles that require cleaning.

INVESTIGATION-DERIVED RESIDUALS

Place soil cuttings and other residuals in appropriately labeled containers for disposition by the client. All soil samples transported to the laboratory must be returned to the client for disposition. Kennedy/Jenks Consultants is available to assist the client with options for disposition of residuals.

DRAFT

SOG-20B

KENNEDY/JENKS CONSULTANTS
STANDARD OPERATING GUIDELINE

HANDLING AND DISPOSAL OF INVESTIGATION-DERIVED WASTE

INTRODUCTION

Environmental site investigations usually result in generation of some regulated waste, particularly if the project involves drilling and construction of monitoring wells. Any potentially hazardous or dangerous material that is generated during a site investigation must be handled and disposed of in accordance with applicable regulations (22 CCR, Chapter 30). This guideline provides a procedure to be used for dealing with investigation-derived wastes that have the potential of being classified as hazardous or dangerous, including soil cuttings, well development water, and decontamination water.

EQUIPMENT

- DOT-approved packaging (typically DOT 17E or 17H drums)
- Funnel
- Bushing wrench
- 15/16-inch socket wrench
- Shovel
- Appropriate markers (spray paint, paint pen)
- Plastic sheeting
- Drip pans
- Pallets

TYPICAL PROCEDURES

Preparing Containers

1. Place each container on a pallet if it is to be moved with a fork lift after it is full.

2. Place plastic sheeting under containers for soil and drip pans under containers used to hold water.

3. Ensure that packaging materials are compatible with the wastes to be stored in them. Bung-type drums should be used to contain liquids. If a liquid is corrosive, a plastic or polymer drum should be used.

   Solids should be placed in open-top drums. Liners are placed in the drums if the solid material is corrosive or contains free liquids. Gaskets are also used on open-top drums.

Storing Wastes

1. As waste materials are generated, place them directly into storage containers.

2. Do not fill storage drums completely. Provide sufficient outage so that the containers will not be overfull if their contents expand.

3. After filling a storage drum, seal it securely, using a bung wrench or socket wrench, for a bung-type or open-top drum, respectively.

4. Label drums or other packages containing hazardous or dangerous materials and mark them for storage or shipment. To comply with marking and labeling requirements, affix a properly filled out yellow hazardous waste marker and a DOT hazard class label to each waste container. Do not mark drums with Kennedy/Jenks Consultants' name. All waste belongs to the client. Mark accumulation start-date.

5. During an ongoing investigation, use a paint marker to mark the contents, station number, date, and quantity of material on each drum or other container. Do not mix investigation-derived wastes with one another or with other materials. Do not place items such as Tyvek, gloves, equipment, or trash into drums containing soils or liquids, and do not mix water and soil. Disposable protective clothing, trash, soil, and water materials should be disposed of in separate containers.

6. Upon completion of field work, or the portion of the project that generates wastes, notify the client as to the location, number, contents, and waste type of waste containers. Remind the client of the obligation to dispose of wastes in a timely manner and in accordance with applicable regulations.

REGULATIONS

22 CCR, Chapter 30 California Hazardous Waste Regulations.

49 CFR 100-177, Federal Transportation of Hazardous Materials Regulations.

EPA Region X, Technical Assistance Team. 1984. Manual for Sampling, Packaging, and Shipping Hazardous Materials. Seattle, WA: EPA.

SOG-21

KENNEDY/JENKS CONSULTANTS
STANDARD OPERATING GUIDELINE

BOREHOLE LOGGING

INTRODUCTION

This guideline describes procedures followed by Kennedy/Jenks Consultants personnel for classifying soils and for preparing borehole logs and other types of soil reports. It assists in obtaining uniform descriptions of soils encountered during borehole programs and enhances consistency among Kennedy/Jenks Consultants personnel and among projects.

Borehole logging is the systematic observation and recording of geologic and hydrogeologic information from subsurface borings and excavations. As adopted by Kennedy/Jenks Consultants, and in accordance with general practices followed by the profession, the Unified Soil Classification System (USCS), (ASTM D 2488-90) is used to identify, classify, and describe soils.

RECOMMENDED MINIMUM REQUIREMENTS

Soil classification and borehole logging should be conducted by a geologist or another professional trained in the classification of soils.

EQUIPMENT

- Boring log forms (1st and 2nd sheet, K/J Form F-40.1, 40.2)
- Daily inspection report forms (K/J Form F-3, F-4)
- Chain of custody forms/request for analysis forms
- USCS (ASTM D 2488-90) Table and Classification Chart
- Soil color chart (i.e., Munsell)
- American Geological Institute (AGI) data sheets

- Graph paper
- Engineer's scale
- Previous project reports and boring logs
- Pocket knife or putty knife
- Hand lens
- Supply of clean water
- Dilute HCL
- Gloves (latex, nitrile as described in project Health & Safety Plan)
- Personal protective clothing and equipment, as described in the project Health & Safety Plan
- Sample containers (brass, steel or aluminum liners, plastic or glass jars)
- Decontamination equipment and supplies
- Aluminum foil, teflon sheets and paper towels

TYPICAL PROCEDURES

Soil Classification

Soils are typically logged in conjunction with advancing boreholes and sampling subsurface soils. Although the guideline focuses on classifying soil samples obtained from boreholes, this particular procedure also applies to soils and sediments collected using other techniques (e.g., post hole digger, scoop, Van Veen sampler, and backhoe).

The USCS categorizes soils into 15 basic groups, each with distinct geologic and engineering properties. The following steps are required to classify a soil sample:

1. Observe basic properties and characteristics of the soil. These include grain- size grading and distribution and influence of moisture on fine-grained soil.

2. Assign the soil a USCS classification and denote it by the standard group name and symbol.

3. Provide a written description to differentiate between soils in the same group, if necessary.

Many soils have characteristics that are not clearly associated with a specific soil group. These soils might be near the borderline between groups, based on either grain-size grading and distribution, or plasticity characteristics. In this case, assigning dual group names and symbols might be appropriate (e.g., GW/GC or ML/CL).

The three basic soil groups are:

- Coarse-Grained Soils. For soils in this group, more than half of the material is larger than No. 200 sieve (0.074 mm).

- Fine-Grained Soils. For soils in this group, one half or more of the material is smaller than No. 200 sieve (0.074 mm).

- Highly Organic Soils. This group includes soils with high organic content, such as peat.

  Note: No. 200 sieve is the smallest size that can be seen with the naked eye.

Classification of Coarse-Grained Soils

Coarse-grained soils are classified on the basis of:

1. Grain size and distribution
2. Quantity of fine-grained material (i.e., silt and clay)
3. Character of fine-grained material

Classification uses the following symbols:

Basic Symbols	Modifying Symbols
G - gravel	W - well graded
S - sand	P - poorly graded
	M - with silt fines
	C - with clay fines

The following are basic facts about coarse-grained soil classification:

- The basic symbol G is used if the estimated percentage of gravel is greater than that for sand. In contrast, the symbol S is used when the estimated percentage of sand is greater than the percentage of gravel.

- Gravels range in size from 3 in. to 1/4 in. (No. 4 sieve). Sands range in size from No. 4 sieve to No. 200 sieve. Use the Grain Size Scale Used by Engineers (ASTM Standards D422-63 and D643-78) to further classify grain size as specified by the USCS.

  Note: This grain size scale differs from the Modified Wentworth Scale used in teaching most geologists. Also, it introduces a distinction between sorting and grading.

- The modifying symbol W indicates good representation of all particle sizes.

- The modifying symbol P indicates that there is a predominant excess or absence of particle sizes.

- The symbol W or P is only used when there is less than 15 percent fines in a sample.

- Modifying symbol M is used if fines have little or no plasticity (silty).

- Modifying symbol C is used if fines have low to high plasticity (clayey).

- The following rules apply for the written description of the soil group name:

Types of Soil	Rule
Sands and gravels (clean)	Less than 5 percent fines
Sands (or gravels) with fines	5 to 15 percent fines
Silty (or clayey) sands or gravels	Greater than 15 percent fines

- Other descriptive information includes:

  - Color
  - Maximum grain size
  - Composition of grains
  - Approximate percentage of gravel, sand, and fines (use a percentage estimation chart)

Modifiers	Description
Trace	Less than 5 percent
Few	5 to 10 percent
Little	15 to 25 percent
Some	30 to 45 percent
Mostly	50 to 100 percent

  - Mineralogy
  - Grain shape (round, subround, angular, subangular)
  - Moisture (dry, moist, wet)
  - Structure
  - Organic material
  - Odor

Classification of Fine-Grained Soils

Fine-grained soils are classified on the basis of:

1. Liquid limit
2. Plasticity

Classification uses the following symbols:

Basic Symbols	Modifying Symbols
M - silt	L - low liquid limit
C - clay	H - high liquid limit
O - organic	
Pt - peat	

The following are basic facts about fine-grained soil classification:

- The basic symbol M is used if the soil is mostly silt, while symbol C applies if it consists mostly of clay. Use of symbol O indicates that

organic matter is present in an amount sufficient to influence soil properties. The symbol Pt indicates soil that consists mostly of organic material.

- Modifying symbols are based on the following hand tests conducted on a soil sample:

  - Dry strength (crushing resistance)
  - Dilatency (reaction to shaking)
  - Toughness (consistency near plastic limit)

- Soil designated ML has little or no plasticity and can be recognized by slight dry strength, quick dilatency, and slight toughness.

- CL indicates soil with slight to medium plasticity, which can be recognized by medium to high dry strength, very slow dilatency, and medium toughness.

- OL is used to describe a soil that is less plastic than CL soil and can be recognized by slight to medium dry strength, medium to slow dilatency, and slight toughness.

- MH soil has slight to medium plasticity and can be recognized by low dry strength, slow dilatency, and slight to medium toughness.

- Soil designated CH has high plasticity and is recognizable by its high dry strength, no dilatency, and high toughness.

- OH soil is less plastic than CH soil and can be recognized by medium to high dry strength, slow dilatency, and slight to medium toughness.

- Other descriptive information includes:

  - Color
  - Moisture
  - Consistency (very soft, soft, firm, hard, very hard)
  - Structure
  - Compactness (loose, dense) for silts
  - Cementation (uses hydrogen chloride)
  - Odor

Logging Refuse

This procedure applies to the logging of subsurface samples collected from a landfill or other waste disposal site:

1. Observe refuse as it is brought up by the hollow stem auger or bucket auger.

2. If necessary, place the refuse in a plastic bag to examine the sample.

3. Record observations according to the following:

   - Composition (by relative volume), e.g., paper, wood, plastic, cloth, cement, construction debris. Use such terms as "mostly" or "at least half." Do not use percentages.

   - Moisture content: dry, damp, moist, wet.

   - State of decomposition: highly decomposed, moderately decomposed, slightly decomposed, etc.

   - Color: obvious mottling included.

   - Texture: spongy, plastic (cohesive), friable.

   - Odor.

   - Combustible gas indicator readings (measure downhole).

   - Miscellaneous: dates of periodicals and newspapers, degree of drilling effort (easy, difficult, very difficult).

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